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Sultling thinking strategy and its impact on improving the accuracy of some volleyball skills

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Abstract

This study aims to prepare practical volleyball lessons with a complex thinking strategy, and to identify the impact of volleyball strategy on the accuracy of the three volleyball skills (transmission from the bottom, the front preparation from the head, and receiving the two hands from below) for students, and I adopted the experimental research curriculum with the experimental design that The experimental and controlled groups with the control of the tribal and remote tests, for its suitability for the current research and its independent variable (the strategy of complex thinking) that applies to the students of the experimental group, while the students of the control group are applying the educational method used as it is in the physical education lesson, and the limits of the research community represented in the students of the second stage From the Faculty of Physical Education and Sports Science/Karbala University continuing to continue the morning study for the academic year (2023/2024), The total number of (92) students, who are inherently distributed in equal preparation to the four academic people, reached (23) students for each of them, in line with the achievement of the purposes of systematic research procedures. This society, which reached (46) students at (50%) of their origin society, represents the two research groups according to the commitment to the determinants of the aforementioned experimental design, and after identifying the tests, practical lessons in volleyball were prepared in this strategy and applied them by experimenting with the reality of two lessons per week for a period of (6) weeks Success, to be (4) practical lessons for each skill, and with a total of (12) educational units, and after the end of the experiment, the results of tribal and post tests were addressed with a system (SPSS), and The conclusions and recommendations were that it is possible to apply the vocabulary of the complex thinking strategy in practical physical education lessons for the second stage in the Faculty of Physical Education and Sports Science, and its application helps in improving the level of the accuracy of the three volleyball skills (transmission from the bottom, the front preparation from the head, and receiving hands From the bottom) among the second stage

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Journal of Physical Education
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https://jcope.uobaghdad.edu.iq

students in the Faculty of Physical Education and Sports Science, and they are aware of the improvements of its accuracy among students who learn without them in the practical lessons of volleyball, and it is necessary to generalize the results of this research when seeking to improve the accuracy of the three volleyball skills (transmission from the bottom, and the front preparation From above the head, and receiving hands from the bottom) among students of the second stage in the College of Physical Education and Sports Science, and it is necessary to focus on practical applications for strategies to stimulate students thinking more than explanation and guidance in the practical lessons of volleyball to increase students 'empowerment of practice and application based on the discovery Knowledge of the skill accuracy by the bridle thinking in it.
Keywords: complex thinking strategy, skill accuracy, volleyball skills.

Introduction:

Teaching volleyball skills is a purposeful process to develop and improve students' experiences and continuously change their motor behavior manifested in performing the skills of this game. Continuing this process requires continuing to search for new or more appropriate teaching strategies. Therefore, students of the College of Physical Education and Sports Sciences have ideas and information about how to perform volleyball skills in their memory. However, this information and ideas still need to be purposefully filtered to serve the mental and skill factors in the lesson. This calls for attention to communicating with them using strategies that differ from what is followed. Hence, it is worth noting that this digression is consistent with modern trends in giving an important role to thinking processes and their ramifications that occur in the cognitive structure aimed at changing skillful motor behavior in order to enable learners to achieve the required improvements. It is also necessary not to neglect the role of knowledge in activating skillful motor learning in the physical education lesson environment.

Studies have confirmed that "the brain works on the principle of 'use it or lose it', and hence it was necessary to develop divergent thinking which in turn helps maintain brain activity." (Nadia, 2012, p. 213)

Divergent thinking is a type of thinking that emerged as a result of numerous studies and research based on Guilford's theory of factor analysis of creativity, Jean Piaget's theory of cognitive development, contemporary theories of intelligence, including Gardner's theory, and theories and research based on the two halves of the brain. (Ali, 2012, pp. 1-104)

Divergent thinking is also defined as "the learner's ability to produce different responses or offer more than one solution to a problem at hand by branching out their thinking in multiple, different directions—that is, creating the greatest possible connection between ideas and information related to the topic, and focusing on the differences and rarity of the solutions and responses presented." (Jihad, 2018, p. 575)

But Divergent thinking strategy It is defined as "a set of steps, procedures, and processes followed by the teacher that allow learners' thinking to branch out by creating new connections between the neurons that make up the brain's structure. It contributes to opening new paths for flexible thinking, multiple visions, and the emergence of divergent, divergent responses." (Zainab, 2016, p. 89)

The divergent thinking strategy is classified as containing seven strategies as follows: (Hayat, 2016, p. 64)

Journal of Physical Education
Volume 37 – Issue (1) – 2025 Open Access
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https://jcope.uobaghdad.edu.iq

Hypothetical thinking: It relies on directing a set of hypothetical questions to learners to encourage them to think.

Reverse thinking: It provides more opportunities for learners to deepen their understanding of events and situations and to think beyond them, thus moving from thinking about acquired knowledge to thinking beyond this knowledge.

Application of different symbolic systems: It relies on the use of different symbolic systems in learning situations, to absorb the elements of the educational situation.

Similarity: It is the one that supports opportunities to search for relationships between things and link ideas.

Point of view analysis: It helps the learner to think about his opinions and encourages him to express his viewpoints, ideas, principles, values, beliefs and opinions in various situations.

The sequel: It is a process of completing things that prompts the learner to think in multiple directions to try to find relationships between the existing elements.

Network analysis: It expresses the interconnectedness of some situations, phenomena and things around us in complex, intertwined and interwoven relationships and ways.

The role of the teacher in the divergent thinking strategy:(Adnan, 2018, p. 249)

Encourage the learner to brainstorm different ideas without interrupting or restricting any of them. Continuously reinforce ideas and follow up with successive questions to help the learner generate different ideas and search for good answers to these questions.

The teacher moves on to the other axes of the same strategy by posing successive and probing questions without being restricted to a specific number in a single educational unit, depending on the nature of the lesson topic, the time allotted for it, the effectiveness of the learners, and the requirements of the educational situation.

Guiding learners to monitor their ideas and train them to organize and arrange them according to specific themes, and creating a suitable atmosphere for understanding and learning knowledge through interaction between teacher and learner, and between learners themselves, which contributes to the development of more concepts and skills, and the development of divergent thinking.

Developing a spirit of cooperation among learners inside and outside the lesson through group discussion, allowing learners to ask questions, and raising their level of motivation.

Taking into account the learners' tendencies, orientations, and values, and providing an atmosphere of freedom for them within the classroom so that each learner can express his or her opinion while respecting the opinions of others.

Provide learners with appropriate feedback on their opinions about their colleagues' performance on assigned tasks, clarify and explain what they need, speak clearly, and provide them with feedback on their performance.

The teacher must ensure that the learners understand the nature of the activities and tasks they are required to perform, and instill in them a spirit of determination and resolve so that they can acquire the ability to think about and make decisions regarding problems in various educational situations.

The role of the learner in the divergent thinking strategy:(Wajdan, 2017, p. 27)

RResponding to questions the teacher asks them to determine the desired performance and the consequences.

Journal of Physical Education
Volume 37 – Issue (1) – 2025 Open Access
P-ISSN: 2073-6452, E-ISSN: 2707-5729
https://jcope.uobaghdad.edu.iq

RRetaining knowledge through discussion and exchange of acquired ideas, and the possibility of applying them in new educational situations, especially those with a changing environment.

RRecognizing the connections and relationships between knowledge and the details of skill performance and expressing them in their own style.

RCollaboration, collaboration, knowledge seeking, and forming mental models of what has been learned.

RExpressing views, ideas, principles, and values through the topics covered in the skills vocabulary.

RFind similarities and differences between items in the topics presented in the skills learning lessons.

Through the researchers' visits to practical lessons for teaching volleyball skills to second-year students in the College of Physical Education and Sports Sciences at the University of Karbala, and discussions with the subject's teachers, they noticed that students need to increase their ability to raise their capabilities in how to activate and comprehend the knowledge presented to them, and then break out of the repetitive monotony of the same performance. This pace worked to limit their thinking to the limits of what was presented to them and reduced the possibility of overcoming the weaknesses that appeared clearly in their weak learning of the accuracy of some volleyball skills. From this observation, which is considered one of the tools of scientific research, the researchers sought to delve into research into teaching strategies through which it is possible to activate the role of activating and generating ideas in the cognitive structure of students, which would correct the paths of motor programs for each skill according to the determinants of the correct model in a sound manner free of common errors, that is, searching and influencing the same cognitive structure and previous experience to store information and branch out in thinking about the details of the accuracy of the three volleyball skills. (The underhand serve, the overhead forward set-up, and the underhand reception) are taught to students themselves based on the knowledge they are provided with, and then they work to improve this accuracy by adopting this new knowledge and changing the educational environment. This is an attempt by researchers to contribute to supporting scientific efforts that aim to improve the reality of teaching the accuracy of volleyball skills.

Through the academic researchers' approach to physical education teaching methods, and their direct knowledge of the methods used in teaching volleyball skills to students in the College of Physical Education and Sports Sciences, they noticed a clear weakness in the level of accuracy of the three skills in volleyball. (The underhand serve, the overhead forward pass, and the underhand reception) Considering that the specificity of physical education students requires them to learn to teach in the future, they must have a skill accuracy that suits their specificity, which calls for an attempt to experiment with the divergent thinking strategy, as an attempt to contribute to supporting physical education teaching methods in a way that helps students overcome this weakness, taking into account their specificity and level. The research aims to prepare practical volleyball lessons using the divergent thinking strategy, and to identify the effect of the volleyball strategy on the accuracy of the three skills in volleyball (The underhand serve, the overhead forward set-up, and the underhand reception) among students, and the researchers assumed that there are statistically significant differences between the results of the accuracy tests of the three skills in volleyball. (Sending from below, forward preparation from above the head, and

Journal of Physical Education
Volume 37 – Issue (1) – 2025 Open Access
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https://jcope.uobaghdad.edu.iq

receiving with the hands from below) before and after for the experimental and control research groups, and there are statistically significant differences between the results of the accuracy tests of the three skills in volleyball. (Sending from below, forward preparation from above the head, and receiving with the hands from below) The dimensional difference between the experimental and control research groups.

Method and tools:

The experimental research method was adopted with an experimental design with two experimental and control groups with tight control of the pre- and post-tests, to suit the current research and its independent variable (the divergent thinking strategy) that is applied to the students of the experimental group. As for the students of the control group, they apply the educational method followed as it is in the physical education lesson. The boundaries of the research community were represented by the second-stage students of the College of Physical Education and Sports Sciences/University of Karbala who continue to continue morning studies for the academic year (2023/2024), with a total number of (92) students, and they are distributed by nature in equal numbers into four study sections, as they amounted to (23) students for each section, in accordance with achieving the purposes of the methodological research procedures. The main research sample (application) was chosen randomly by simple lottery from two sections of this community, which amounted to (46) students at a rate of (50%) of their original community, to represent the two research groups in accordance with the commitment to the specifications of the aforementioned experimental design. Section (B) was chosen randomly, with a number of students (23) students were selected to represent the experimental group. Section (A) with (23) students was also selected randomly to represent the control group. Also, (10) students were selected randomly from Section (C) at a rate of (10.87%) of their original community, considering that the data of the individuals in this sample were not subjected to any statistical processing, as shown in Table (1):

Table (1) shows the description of the research community, its sample, and its groups in terms of number and percentage.

College	partment name	umber of second-stage students kidney	Number of students in the exploratory sample group	Number of excluded students (The Remaining)	umber of students in the main sample	
					erimental group	ontrol group
Physical Education and Sports Sciences, University of Karbala	(A)	23	—	—	—	23
	(B)	23	—	—	23	—
	(C)	23	10	13		
	(D)	23	—	23		
the total		92	10	36	46	
percentage		100%	10.87 %	39.13%	50 %	

Journal of Physical Education
Volume 37 – Issue (1) – 2025 Open Access
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https://jcope.uobaghdad.edu.iq

The homogeneity of the research sample was also verified in some of the incoming variables that might cause extremism in the results of the dependent variable tests in the research experiment later, in order to maintain the internal integrity of the experimental design of the research, as shown by the results contained in Table (2):

Table (2) shows the results of the homogeneity of the students of the main research application sample in some extraneous variables.

Variables and their units of measurement	mber	ithmetic mean	standard deviation	oefficient of skewness	oefficient of variation
hronological age (in months)	46	243.11	2.406	0.247	% 0.99
Body length (cm)	46	169.93	2.112	-0.606	% 1.248
ody length with arm extended upward (cm)	46	185.46	3.662	-0.434	% 1.975
Weight - Mass (kg)	46	71.7	2.053	-0.149	% 2.863

The normal distribution coefficient of skewness is defined between (±1) The coefficient of variation is less than (39%).

To measure the accuracy of each of the three researched skills, I relied on the tests shown in Appendix (1).

Preparatory steps for preparing lessons using the divergent thinking strategy:

The researchers examined the types of educational methods and exercises used in the College of Physical Education and Sports Sciences/University of Karbala.

The researchers reviewed numerous specialized scientific sources and studies on physical education teaching methods available in local libraries and the international information network. They also consulted with the two supervisors to determine the objective of each exercise for each of the three skills and narrow it down precisely, with the aim of preparing educational exercises to suit the students' individual needs and to be consistent with the vocabulary of the divergent thinking strategy.

These lessons were prepared by the researchers by employing the vocabulary of the divergent thinking strategy in the educational and applied aspects of the main section of the practical lesson for the volleyball subject.

Defining general objectives:

Defining the objectives of practical volleyball lessons is one of the most important and first methodological steps, which obliged researchers to establish the general objective of applying practical practice in the content of each educational exercise with the help of providing knowledge about the accuracy of skill performance and directing tasks with a divergent thinking strategy, and what the lesson includes of sub-objectives that suit the age, level and gender of students of the College of Physical Education and Sports Sciences for Girls, as these objectives were determined and limited to the following:

It aims to improve the accuracy level of (the skill of serving from below, the skill of receiving the serve with the hands from below, and the skill of setting up from above the head) in volleyball.

Planning to prepare practical lesson exercises:

Journal of Physical Education
Volume 37 – Issue (1) – 2025 Open Access
P-ISSN: 2073-6452, E-ISSN: 2707-5729
https://jcope.uobaghdad.edu.iq

The general objective of each exercise was determined using a divergent thinking strategy and narrowed down precisely, in accordance with the literature on specialized teaching methods in volleyball.

The integration of the objectives and applications of educational exercises with the divergent thinking strategy was employed in the lesson content in a consistent manner that takes into account the diversity of educational situations according to the stages of the strategy.

We adhere to the principle of taking into account the individual differences of each student and their potential and capabilities in practical performance.

The principle of progression from easy to difficult was adhered to when preparing the divergent thinking strategy exercises.

Criteria for selecting practical lesson exercises:

It was emphasized that the divergent thinking strategy exercises achieve the general and sub-objectives of the lesson.

It was emphasized that the contents of the divergent thinking strategy exercises should be easy to apply and free of complexity.

It was emphasized that the content of the divergent thinking strategy exercises should be flexible in implementation, making it easy to apply in the practical volleyball lesson.

Content of practical lessons using the divergent thinking strategy:

The basic principles of the divergent thinking strategy were employed in each of the educational exercises in the practical lessons as follows: (Fathi, 2009, pp. 26-27)

Do not rush to judgment about performance until you have generated a large number of ideas.

Find a wealth of performance ideas.

Accept all ideas (from the teacher, peers, the classroom environment as a whole).

Thinking to the fullest extent with vitality and seriousness in searching for ideas related to performance, and avoiding idle thinking.

Taking a little time out allows the mind to generate original ideas that will help produce the desired performance.

Trying to integrate ideas with mental alertness until they are complete by linking various ideas here and there.

All of the information contained in this preparation and the strategy were incorporated into the curriculum for practical lessons in volleyball, as shown in (Appendix 2).

Pilot experiment:

It was conducted on (10) students from the second stage of the College of Physical Education and Sports Sciences/University of Karbala from outside the main research sample in the internal hall of this college, at exactly nine o'clock on Sunday, corresponding to the date (10/29/2023). Its purpose was to identify the potential obstacles that might appear in applying the experiment with the divergent thinking strategy and training the assistant work team to apply it, taking into account setting the timings for each section of the lesson. The researcher did not encounter any obstacles worth mentioning from this exploratory experiment.

Journal of Physical Education
Volume 37 – Issue (1) – 2025 Open Access
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https://jcope.uobaghdad.edu.iq

The lesson included the following timetable:

Total lesson time: (90) minutes divided into the preparatory section (20) minutes, the main section (60) minutes, the educational side (20) minutes, the practical side (40) minutes, and the final section of the lesson (10) minutes.

Educational aspect:Which lasts (20) minutes, the strategy (team-double-single) will be applied according to the previously mentioned specifications.

The practical side:Which lasted (40) minutes and included practical educational exercises on the accuracy of the three skills in volleyball. (Sending from below, forward preparation from above the head, and receiving with the hands from below) as practical lessons were applied at a rate of two lessons per week for a period of (6) consecutive weeks, so that there would be (4) practical lessons for each skill, and a total of (12) educational units, in order to reach mastery of the accuracy of the three skills in volleyball. (Send from below, front set up overhead, and receive with hands from below) for students.

After completing this experiment, the post-tests were applied, and the results of the study were processed using the SPSS system, version (V).28), to calculate the percentage, mean, standard deviation, unrelated samples t-test, and related samples t-test.

Results:

Table (3) shows the results of the pre-accuracy tests between the two research groups.

pendent Variable Tests		he group	ithmetic mean	andard deviation	lue vin	ay)	)	y)	gnificance of difference
lleyball skills accuracy	end from below	mpiricism	14.96	2.962	823	84	45	5	t significant
		he officer	15.3	2.225					
	Front overhead setup	mpiricism	31.96	6.256	125	95	66	9	t significant
		the officer	33.48	5.648					
	eception with hands from below	mpiricism	25.17	5.024	.57	.54	03	8	t significant
		he officer	24.61	4.48					

Not significant if < (Sig)(0.05) at a significance level of (0.05) and a degree of freedom (n1 + n)2-2 = 44

Journal of Physical Education
Volume 37 – Issue (1) – 2025 Open Access
P-ISSN: 2073-6452, E-ISSN: 2707-5729
https://jcope.uobaghdad.edu.iq

Table (4) shows the results of the three skills accuracy tests before and after the experimental and control groups.

Test it of measurement		The group	npariso n	hmetic mean	ndard deviation	mean difference	iation of differences	ndard error	)	y	nificance of difference
olleyball Skills Performance Accuracy (Score)	d from below	piricism 23)	vious	4.96	2.962	10.69	3.253	678	76	0 6	Dal
			next	5.65	1.027						
		The officer 23)	vious	5.3	2.225	6.27	2.973	.62	1	0	Dal
			next	1.57	2.643						
	Front overhead setup	piricism 23)	vious	1.96	5.256	32.43	6.465	348	05	0 9	Dal
			next	4.39	3.448						
		The officer 23)	vious	3.48	5.648	21.35	8.272	725	37	0 7	Dal
			next	4.83	4.793						
	ception with hands from below	piricism 23)	vious	5.17	5.024	33.7	6.123	277	39	0 1	Dal
			next	3.87	2.581						
		The officer 23)	vious	4.61	4.48	22.91	6.701	397	39	0 9	Dal
			next	7.52	3.629						

The statistical difference is significant if (Sig) ≥ (0.05) at a significance level of (0.05) and a degree of freedom of (n) - (1) for each group.

Journal of Physical Education
Volume 37 – Issue (1) – 2025 Open Access
P-ISSN: 2073-6452, E-ISSN: 2707-5729
https://jcope.uobaghdad.edu.iq

Table (5) shows the results of the three dimensional skills accuracy tests between the experimental and control groups.

Test Unit of measurement		e group	mbe r	thmetic mea n	standard deviatio n	)	y)	gnificance of differenc e
olleyball Skills Accurac y Grade	end from below	piricism	23	25.65	1.027	1	0	Dal
		e officer	23	21.57	2.643			
	Front overhea d setup	piricism	23	54.39	3.448	7	0	Dal
		e officer	23	54.83	4.793			
	Reception with hands from below	piricism	23	58.87	2.581	2	0	Dal
		e officer	23	47.52	3.629			

The statistical difference is significant if (Sig) ≥ (0.05) at a significance level of (0.05) and the degree of freedom is (n1 + n2-2) = (44).

Discussion:

It is clear from the results in Table (4) for the pre- and post-comparison that all students in the experimental and control research groups improved their accuracy in the three volleyball skills. (Sending from below, forward preparation from above the head, and receiving with the hands from below) in the results of the post-tests were better than their results in the pre-tests, as is evident from the results of Table (5) that the students of the experimental group outperformed their peers in the control group in the accuracy of these three skills under study, and the researchers attribute the appearance of these improvements between the results of the pre- and post-tests for the students of the experimental group and their superiority in the results of the post-tests to all of the following:

Accuracy of the skill of sending from below:

The researchers attribute the emergence of these results to the fact that the divergent thinking strategy helped students flow with different ideas about the skill performance and accuracy of this skill without interrupting any of them. This teaching strategy helped in continuously reinforcing these ideas and reducing the chances of failure in the accuracy of the repeated performance of these skills by posing several questions to help them generate these different ideas about the skill accuracy requirements by focusing on the position of the body and the movement of its parts to achieve the movements necessary for the skill of sending in detail. The teacher would move to other axes of the same strategy by posing successive questions in a single lesson according to the nature of the accuracy requirements of the skill of sending from below, and the effectiveness of the students in responding to these questions that the teacher discusses with them to reach the skill accuracy required for the skill of sending from below and the consequences resulting from it in the accuracy of this performance when monitoring spatial accuracy. This is supported by directing students towards monitoring their ideas and training in arranging and organizing them in an educational environment that allows students to understand and learn knowledge through interaction between the teacher and the student in this teaching strategy, and between students with each other, (Wahed Issa et al., 2024) which contributes to deriving more

Journal of Physical Education
Volume 37 – Issue (1) – 2025 Open Access
P-ISSN: 2073-6452, E-ISSN: 2707-5729
https://jcope.uobaghdad.edu.iq

concepts and developing divergent thinking, which helped. In generating ideas of importance in recalling information that integrates with the knowledge that students receive about the skill precision required in each educational situation represented by practicing and applying the educational exercises included in the strategy of divergent thinking in the lesson, which was based on cooperation between students and activating their role in learning by exchanging knowledge on how to perform skill precision at the same time according to the specific nature of their tasks, which also helped in improving the acquisition of that mutual knowledge and employing it when applying educational exercises. (Mahmood & Kadhim, 2023)

"One of the positive aspects of the divergent thinking strategy is that it develops the student's sense of responsibility for his learning, as he arrives at knowledge on his own, which increases his confidence in his skillful behavioral performance abilities." (Hanson, 2006, p. 121)

"What supports the wide range of teaching strategies is the unification of cognitive and associative learning theories, both of which are required in education without stressing or tiring the learners' minds. Reducing the process of explanation and presentation is necessary to allow the opportunity for exploration by the learners themselves, which supports their role and increases their activity in this learning." (Joyce, Weil & Calhoun, 2002, p: 16)

"The characteristics of an active learning environment are that it makes the learner an element capable of taking initiative, interacting with peers, and expressing what he or she has with a large margin of freedom, in addition to its role in shifting the focus of the educational process from the teacher to the learner. The characteristics of an active learning environment can be identified as being rich in diverse sources of information, including opportunities for asking questions and seeking clarification, and a spirit of cooperation and positive participation in work prevailing in it." (Mohsen, 2016, p. 244)

Accuracy of the overhead front set-up skill:

The researchers attribute the emergence of these results to the fact that the divergent thinking strategy helped provide students with appropriate feedback on their opinions regarding their peers' skill accuracy in this skill, and provided them with clarification and explanation of what their peers in the experimental group needed. This strategy helped increase the space for students to talk in the lesson in clear terms, and provided them with feedback on their performance, so that they could understand the nature of the activities or the type of tasks they were required to perform, instilling in them a spirit of determination and resolve so that they could acquire the ability to think about how to apply different educational exercises and the ability to make decisions about them to produce the skill of frontal preparation from above the head with the required accuracy. This helps in retaining cognitive information according to what this strategy provides through discussion and exchange of ideas obtained between students, and the possibility of applying it in other educational exercises, especially those with a changing environment, and realizing the connections and relationships between knowledge of the details of skill performance and expressing them in their own style, cooperation and synergy, searching for knowledge, and forming mental models of what was learned, to produce the skill of frontal preparation from above the head with skill accuracy. (Kadhim, 2024) Required, if the role of practice and application of this skill and the positive impact of the role of the divergent thinking strategy and the tasks and roles of this strategy in facilitating the occurrence of these behavioral

Journal of Physical Education
Volume 37 – Issue (1) – 2025 Open Access
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https://jcope.uobaghdad.edu.iq

changes represented by the improvement of skill performance and its accuracy, in addition to the clear impact of good planning of educational units by applying three units to improve skill performance and then applying the fourth unit to improve spatial accuracy, considering that the latter is linked to improving performance or, more precisely, linked to correct performance that is free of errors or accompanying movements. (Nashwan & Alzoubi, 2022) Thus, the vocabulary of the divergent thinking strategy and defining educational roles during teaching had a positive impact in pruning the common errors of this skill in volleyball, which supported practice and application, as the required improvements in the skill cannot be achieved without its practical application, and the role of knowledge is only an important support for drawing the motor program in the cognitive structure. (Kadhim & Majid, 2023)

"Studies have shown that divergent thinking leads to the activation of new connections between neurons, allowing us to think more easily along new paths that we hadn't previously had, in a way that helps open up new possibilities for the mind, contributing to more mental activity, and leading the mind to work with better potential, more broadly, and with greater efficiency than before." (Carmen & Other, 2017, p. 42)

Likewise, the adage “what you do speaks louder than what you say” is closely linked to modeling behavior. In physical education, one of the quickest and most efficient ways to teach physical activity (sports) is through effective and influential models that highlight transitional points in performance. (Mahmoud, 2006, p. 33)

"Situations that do not put pressure on the nervous system help produce stable, desired responses that are easier to remember than stressful situations that the individual deliberately seeks to forget, including their details. Thus, it is necessary to avoid the coercive nature of human behavior when establishing desired responses to be recalled in new situations." (Marcora, 2018, p: 106)

Accuracy of receiving skill with hands from below:

The researchers attribute the emergence of these results to the fact that the divergent thinking strategy helped develop a spirit of cooperation among students in the practical lesson to apply the vocabulary of this strategy through group discussion between students and allowing the exchange of questions about the accuracy of the skill of receiving with the hands from below and their answers among them, and raising their level of motivation, taking into account their tendencies and directions, and providing an atmosphere of freedom for them, where each student can express his opinion while respecting the opinions of others, to express points of view and ideas to support the information of the motor program for the skill, which is addressed in the details of the accuracy of the skill of receiving with the hands from below, and to support the search for similarities and differences between the knowledge of performance presented in the lessons of this skill in volleyball, as the divergent thinking strategy helped improve the processes of cognitive structure by investing the answer information resulting from the students’ questions among themselves about the accuracy of the skill of receiving with the hands from below and its accuracy on the one hand, which helped in improving the processes of motor control to perform spatial accuracy on the other hand, so that these results give an indication that this strategy aimed to teach the mind and body simultaneously in a cooperative educational atmosphere diverse with educational exercises dominated by Encouraging and encouraging students to engage in practical exercises and application during the volleyball lesson, using easily accessible

Journal of Physical Education
Volume 37 – Issue (1) – 2025 Open Access
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https://jcope.uobaghdad.edu.iq

visual aids in the various practical lessons, helped them outperform the control group in the post-test results.

"Skills can be developed by moving from the learning stage to the training and practical application stage of the skill, i.e., by employing the learned skill in real-life play situations." (Abdullah and Rahab, 2011, p. 11)

"The learner must also be careful to make intelligent use of available technologies to improve motor skill learning, as these technologies can provide additional resources for learning and improve performance." (Ruya, 2010, p. 2)

As for the improvement in the accuracy results of the three skills in volleyball (The underhand serve, the overhead forward set-up, and the underhand reception) in the post-test results were better than the pre-test results for the control group students. The researcher attributes this to the positive impact of the educational method used in the lesson, and the students' continuous, uninterrupted attendance and continued practical performance of these three skills. However, their level of accuracy did not reach the level reached by their peers in the experimental group because they did not apply the divergent thinking strategy in the practical lesson of volleyball. (Farhan et al., 2016)

The teacher also "continuously supervises and monitors the learner, so that he can monitor the development of performance and improve important motor skills." (Wulf & Shea, 2002, p: 191)

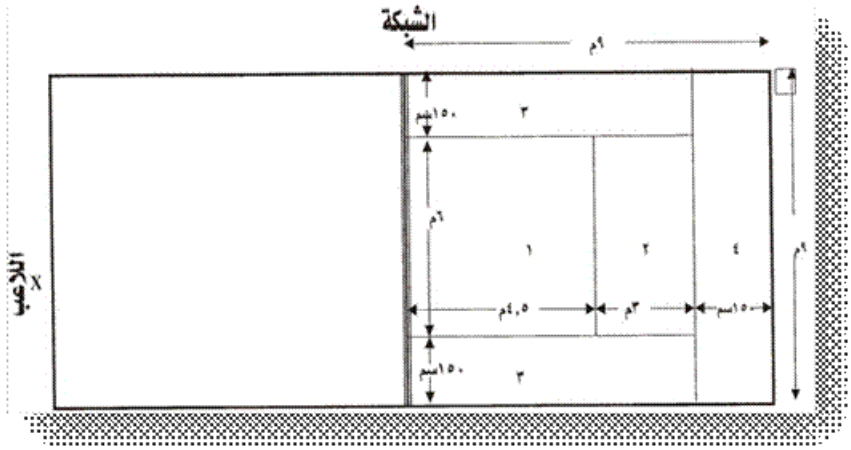
Conclusions and recommendations:

1. It is possible to apply the vocabulary of the divergent thinking strategy in practical physical education lessons for volleyball for the second stage in the College of Physical Education and Sports Sciences.
2. Applying the divergent thinking strategy helps improve the accuracy level of the three skills in volleyball. (The underhand serve, the overhead forward set-up, and the underhand reception) are taught to second-year students in the Faculty of Physical Education and Sports Sciences, and their accuracy is improved by students who learn without them in practical volleyball lessons.
3. It is necessary to generalize the results of this research when seeking to improve the accuracy of the three skills in volleyball. (Sending from below, forward preparation from above the head, and receiving with the hands from below) by second-year students in the College of Physical Education and Sports Sciences.
4. It is necessary to focus on the practical applications of strategies for activating students' thinking more than explanation and guidance in practical volleyball lessons, in order to increase students' ability to practice and apply based on the discovery of knowledge with skill precision through divergent thinking.
5. It is necessary to focus on developing the capabilities of volleyball teachers and increasing their knowledge of the divergent thinking strategy in accordance with the foundations and principles of physical education teaching methods.

Journal of Physical Education
Volume 37 – Issue (1) – 2025 Open Access
P-ISSN: 2073-6452, E-ISSN: 2707-5729
https://jcope.uobaghdad.edu.iq

Appendix (1) explains the three skill tests.

First: Testing the accuracy of the sending skill to a field divided into (4) zones.:



ü Maximum degree: (40) degrees,**Unit of measurement:**(degree)

Figure (1) shows a diagram for testing the accuracy of the transmission skill.

Second: Testing the accuracy of the front settings from above the head:

- **Maximum degree**(100) degrees.
- **Unit of measurement:**(degree)

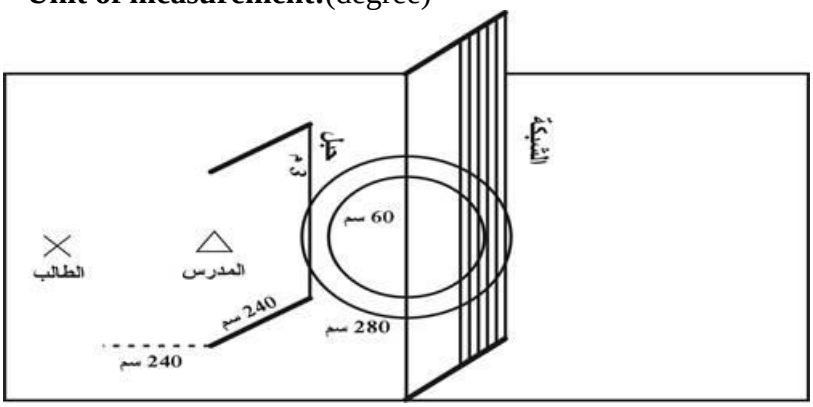


Figure (2) shows a diagram of the test of the accuracy of the skill of counting from above with the fingers.

Third: Testing the accuracy of transmission reception:

v **Maximum degree:**(90) degrees.

v **Unit of measurement:**(degree)

Journal of Physical Education
Volume 37 – Issue (1) – 2025 Open Access
P-ISSN: 2073-6452, E-ISSN: 2707-5729
https://jcope.uobaghdad.edu.iq

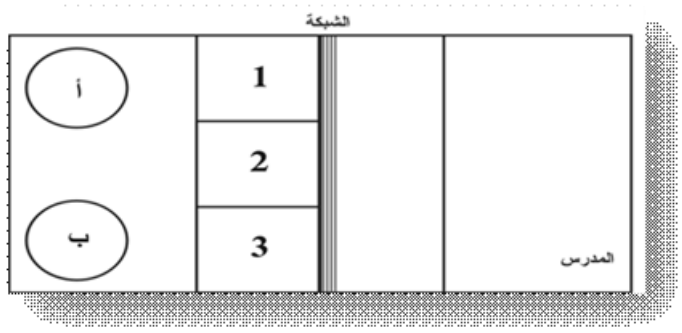


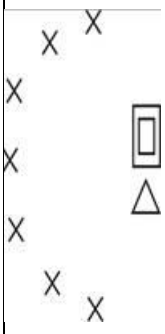
Figure (3) shows the diagram of the hand reception skill accuracy test from below.

Appendix (2) shows a model for a lesson on improving the accuracy of skill performance in volleyball.

Week/Second Stadium/Closed Hall in College/Number of Students (23)

Educational Unit/Fourth Educational objective: Students learn to perform the skill of the downward facing serve.

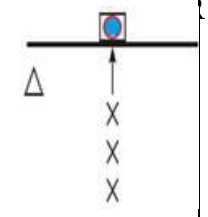
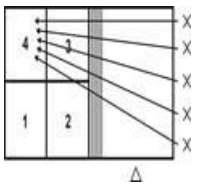
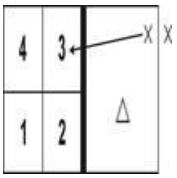
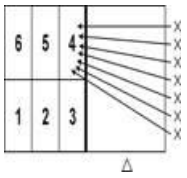
Time/90 minutes Tools/ Legal volleyballs, overhead projector.

Lesson sections		ime	vents and skills	tput of motor formations	Notes
reparatory section the introduction General warm-up Special warm-up		10 d 2 d 4 d 4 d	It is left to the teacher.	etermined by the teacher	he researcher does not interfere with the details.
Main Section 75 d	ducational aspect	10 d	e students sit in a semicircle in front of the teacher, who then displays its sections to them using an overhead projector, explaining the details of proper performance. Then, the teacher performs a model of this		he explanation should not be long and should include details of the skill and clearly present its model. R The teacher works to activate the students' thinking when accurately

Journal of Physical Education
Volume 37 – Issue (1) – 2025 Open Access
P-ISSN: 2073-6452, E-ISSN: 2707-5729
https://jcope.uobaghdad.edu.iq

			skill with a ball several times. The teacher directs them to monitor their ideas and train them to arrange and organize them according to specific axes, and the atmosphere is suitable for understanding and learning knowledge through interaction. He also directs them to take a short time out so that the mind produces original ideas when performing the skill in the practical aspect later, by integrating the ideas to complete them by linking them to the details of performance.		performing the skill later. R The teacher invests in this aspect to activate students' thinking to support perceived cognitive competence when applying the skill's accuracy later.

Journal of Physical Education
Volume 37 – Issue (1) – 2025 Open Access
P-ISSN: 2073-6452, E-ISSN: 2707-5729
https://jcope.uobaghdad.edu.iq

	e practical side	65 d	The students stand in a straight line in groups, one after the other, on the service line to perform an accurate serve from the bottom to cross the net to one of the four areas on the opposite court. Each group is asked to evaluate the accuracy of the performance and each group is given (1) minute before the first application only. They repeat their application of the skill (25) times in turn for each student. The duration of the exercise is (15) minutes. The students stand in a straight line in groups, one after the other, facing a wall (6) meters away, to perform the	   	R The teacher emphasizes the exchange of knowledge among students to realize every subtlety of skill performance. Providing an atmosphere of freedom so that each student can express his opinion while respecting the opinions of his colleagues. R The teacher monitors the groups equally and diagnoses common mistakes. R The teacher corrects and provides feedback on the accuracy of each group's performance and helps stimulate questions and conversations among them. R The teacher allows students to ask questions

Journal of Physical Education
Volume 37 – Issue (1) – 2025 Open Access
P-ISSN: 2073-6452, E-ISSN: 2707-5729
https://jcope.uobaghdad.edu.iq

			accuracy of the skill of sending from below towards a target drawn in a circle inside a (1 x 1) meter square. Each group is asked to evaluate the accuracy of the performance and each group is given (1) minute before the first application only, and they perform (25) times in turn for each student, the duration of the exercise is (15) minutes. The students stand in a straight line in groups, one after the other, on the service line to perform the accurate serve from the bottom to cross the net to one of the four areas on the opposite court. Each group is asked to evaluate the		and share their ideas.

Journal of Physical Education
Volume 37 – Issue (1) – 2025 Open Access
P-ISSN: 2073-6452, E-ISSN: 2707-5729
https://jcope.uobaghdad.edu.iq

			accuracy of the performance and each group is given (1) minute before the first application only. They perform (25) times in turn for each student. The duration of the exercise is (15) minutes. - The same previous exercise, but by dividing the opposite field into (6) zones and performing accurately for the specified zone (30) times. The duration of the exercise is (20) minutes.		
Final section		5 d	It is left to the teacher.	etermined by the teacher	he researcher does not interfere in the details.

Journal of Physical Education
Volume 37 – Issue (1) – 2025 Open Access
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