Journal of Physical Education

Volume 36 – Issue (4) – 2024 Open Access

P-ISSN: 2073-6452, E-ISSN: 2707-5729
https://jcope.uobaghdad.edu.iq

The impact of special exercises using the (Wheatley's) strategy on learning to perform the underhand serve and reception skills in volleyball for students

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DOI:
https://doi.org/10.37359/JOPE.V36(4)2024.2191

Article history: Received 8/ August/2024 Accepted 22/ August /2024 Available online 28/ December /2024

Abstract:

Workers in the field of educational sciences seek to advance the level of their students, and one of the most important of these sciences is sports sciences, which have their own methods and techniques in line with the levels of each age stage, which requires the subject teacher to be well versed in all modern teaching methods and techniques. The research aimed to prepare special exercises in accordance with the strategy of Wheatley in learning the skills of transmission and receiving volleyball for students of Najaf High School for the distinguished, as well as knowing the preference of using (Wheatley strategy or the approach followed) in the research variables as well as to choose the school team participating in the Najaf Education Championship, and the researchers used the experimental approach with two control and experimental groups with pre- and post-tests and conducted two tests (transmission from the bottom, receiving the transmitter) and the research sample was represented by the fifth preparatory grade school students for the academic year 2023-2024, which numbered 24 students from a community of origin numbering 72 students, as they were selected in a simple random way (lottery) and were divided into two control and experimental groups, and each group (12) students' The statistical bag (SPSS) was used to extract the results, and after presenting and discussing the results, it was concluded that there is a positive impact of Wheatley's strategy in learning the skills of transmission and receiving volleyball between the pre-post-tests for both groups as well as between the control and experimental groups and for the benefit of the experimental group, and the researchers recommend the need to use the Wheatley strategy on other games, and pay attention to updating teaching methods and techniques in line with age groups.

Keywords: Whitley strategy, basic volleyball skills

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Journal of Physical Education

Volume 36 – Issue (4) – 2024 Open Access

P-ISSN: 2073-6452, E-ISSN: 2707-5729
https://jcope.uobaghdad.edu.iq

Introduction:

The development of students' abilities largely depends on the extent of their interaction with the teaching method used and their response to it. It is undoubtedly a significant question that crosses the mind of a physical education teacher before entering the classroom: how can the lesson material be effectively conveyed to the students? That is, what is the method and approach that delivers the content to the learner and engages them with the teacher and their peers in comprehending, understanding, and applying the lesson's content? The teacher's goal is not only to provide the learner's mind with information but also to assist them in developing scientific thinking and forming a flexible mindset that enables them to understand the surrounding world, using methods and techniques that actively and positively involve the learner in the learning process.(Eisa & Qasim, 2024)

Despite the numerous studies that focused on teaching methods, which had a significant impact on enhancing the educational process, the research that addressed the use of teaching methods mostly examined repetitive approaches and demonstrated their success to a certain extent.(Mondher et al., 2023)

The game of volleyball has captivated many people of both genders in their love for learning and practicing it, whether in educational institutions or outside of them. Therefore, the process of enhancing this game and elevating its performance to the best level is what the teacher or coach strives for. (Kareem, 2023)

Since schools are one of the main bases for supplying sports clubs with players, this requires finding teaching alternatives that align with the various skills of volleyball in general and are suitable for the age groups of middle school students in particular. (Munaf et al., 2021)

Hence, the necessity arose to conduct such a study to understand the impact of applying Wheatley's strategy in learning the underhand serve and receiving the serve in volleyball, due to the importance of these two skills in student competitions and the scarcity of field studies in these skills.(Nashwan, 2024)

Students now need modern teaching methods (such as the WIT strategy), which are based on constructivist theory that focuses on the learner's role in knowledge construction, in addition to encouraging learners to take responsibility for their own learning, as they act as explorers. Implementing a new strategy involves a change in beliefs about knowledge and science. (Mousa et al., 2019; Muhammad et al., 2021)

In this strategy, participation is positive, and there is enhanced interaction among learners, along with the appropriate use of social skills (cooperation) required for collaborative work, including participation in competition and dialogue among groups. (Zaghloul, 2015)

Through the observation of the researchers as physical education teachers and their watching of most physical education lessons in other schools, along with inquiries from some experts and practitioners in the field of physical education, it has been noted that the common method for teaching various skills in volleyball is the American style, which requires the teacher to be a decision-maker imposing it on the student. This is not a criticism of this method

Journal of Physical Education

Volume 36 – Issue (4) – 2024 Open Access

P-ISSN: 2073-6452, E-ISSN: 2707-5729
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or an attempt to downplay its advantages, but our current era is one of knowledge prosperity and educational work, and this development must be kept up with.

Previous studies have confirmed that there are many teaching methods, each with its own special place in terms of objectives and characteristics, and they play an effective role in correcting mistakes and investing time and effort in the learning process. However, these methods are often neglected by most physical education teachers.

The research problem lies in the weak technical performance in executing the underhand serve and receiving in volleyball among students, due to poor skill performance (technique) and the lack of new strategies that facilitate the teacher's work and engage students in learning. Furthermore, there is a scarcity of studies related to teaching methods in volleyball for students. This has led the researchers to study this issue, which requires further investigation to uncover scientific facts aimed at achieving better performance, especially concerning the selection of the school team participating in the education championship for the year 2023-2024. Consequently, the researchers decided to prepare educational units based on the Wetley strategy for learning the technical performance of these two skills in volleyball.

However, the importance of the research lies in understanding the effect of using the Wetley strategy in learning the artistic performance in the skill of underhand serve and receiving the serve, in order to identify one of the important pillars and to explore the effective role of learning these skills in volleyball, especially when the learner has an important motivation, which is participating in the educational championship for volleyball races for the preparatory stage. Many previous studies have addressed topics related to teaching methods and volleyball in particular, among which the most important are:

The study (Amer, Khalil 2022) aimed to prepare educational units using the JISCO strategy in learning the skill of spike in volleyball and to identify its impact on learning the spike skill in volleyball. The researchers used the experimental method with a design of experimental and control groups. The research community consisted of male students in the second stage at the College of Physical Education and Sports Sciences / University of Baghdad for the academic year 2021-2022, totaling (385) students. A sample was randomly selected through a lottery. One class was chosen as the experimental group with (25) students, and another class was chosen as the control group with (27) students. Additionally, (15) students were randomly selected for the exploratory trial procedures. The researchers chose the spike skill, conducted pre-tests, ensured the equivalence of the sample, and then applied the strategy and conducted post-tests to obtain raw data and statistically process it to extract and interpret the results. The researchers concluded that the strategy had a positive role in achieving significant results for the experimental group, as well as its moral role in considering individual differences. The researchers recommended the necessity of using the strategy .

The study (Saadoon, Saleh 2020) aimed to modify a test for the cognitive achievement of certain technical skills in volleyball for second-year students at the College of Physical Education and Sports Sciences, in addition to identifying the impact of using educational units with the strategy of electronic concept maps on the level of cognitive achievement of some technical skills in volleyball among the research sample.

The researchers adopted the experimental method, and the sample size was (15) students for each experimental and control group. The researchers implemented their main experiment using the electronic concept map strategy with one educational unit per week for a duration of (8) weeks. The results of the study indicated a significant effect in the cognitive achievement

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Volume 36 – Issue (4) – 2024 Open Access

P-ISSN: 2073-6452, E-ISSN: 2707-5729
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test results between the two groups in favor of the experimental group that applied the electronic concept maps. (Saadoon and Saleh, 2020)

As for the study (Khamas, Subhan 2019), the use of exercises related to advanced educational aids, technology, and modern techniques that align with the developments in the field of learning is of great importance in developing the basic skills of volleyball for beginner students. The researchers found a weakness in learning and a lack of interest in learning the basic skills of volleyball. Based on the researcher's experience as a physical education teacher and observing most physical education teachers, they found a weakness and difficulty in learning the basic skills of volleyball. Therefore, the researchers decided to use educational aids. The research sample consisted of students from the Baghdad Al-Karkh Education Directorate, totaling (3200) students for the academic year 2018-2019, and Al-Balat Al-Shuhada Intermediate School for Boys was selected, located in the Al-Risala area.

The study by Ismail and Awad (2019) aimed to evaluate the learning performance of some basic volleyball skills according to the cognitive style of risk-taking, using the content of the seven-stage learning cycle. The researchers employed an experimental method and used a sample of 20 fourth-year secondary students with an average age of 14 years, selected intentionally after being sorted according to a questionnaire designed for this purpose. Various means, tools, and tests were utilized, the most important of which was the use of the learning content from the seven-stage education cycle, which was integrated with the volleyball skills addressed in the research within a learning curriculum lasting 8 weeks, with two hours per week, each unit lasting 45 minutes. After completing the curriculum and conducting pre- and post-tests, the results were statistically analyzed. Consequently, the researchers reached several conclusions, including the impact of the risk-taking cognitive style on the sample regarding the content of the seven-stage learning cycle, which reflected on the values of the volleyball skills addressed in the research. Among the recommendations was the importance of continuing to evaluate performance based on experiential learning. (Ismail and Awad, 2019)

The study (Khalil, Mohammed 2018) aims to prepare an educational curriculum using the generative learning strategy for individuals with cognitive styles (controlled-flexible) in developing the accuracy of certain technical skills in volleyball for the research sample. In addition, it seeks to identify the impact of the educational curriculum using the generative learning strategy for individuals with cognitive styles (controlled-flexible) in developing some technical skills in volleyball. To achieve this goal, the researchers used an experimental method with a factorial design (2×2), and the research sample was selected from the age group of (12-14) years within the National Center for Sports Talent Development in volleyball, consisting of (48) players, while the research sample included (28) players. After selecting the skills and tests and conducting a pilot experiment, the validity of the tests and the educational curriculum was confirmed, and appropriate statistical treatments were conducted. The research reached some conclusions, the most important of which is that the educational curriculum (generative learning strategy and the curriculum followed by the National Center for Sports Talent Development in volleyball) is effective in developing the performance accuracy of the three skills under study with varying differences. (Khalil and Mohammed, 2018)

After this review of the most important previous studies related to the research topic, it is necessary to present the logical reasons for benefiting from these studies. Some of them addressed the appropriate strategies with the selected samples, some discussed how to choose the samples, some selected the variables specific to each skill in volleyball, and finally, the

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studies indicated how to analyze and discuss the results to obtain conclusions and then recommendations for each study. The researchers have utilized previous studies in determining the sample as well as conducting tests and exploring what is new and has not been studied in previous research.

Procedures:
All scientific research resorts to selecting an approach that fits the nature of the problem in solving its issues. Accordingly, the researchers used the experimental method with two equivalent experimental groups due to its suitability for the nature of the problem to be solved. "The experimental method represents the most accurate approach to solving many scientific problems in a practical and theoretical manner" (Alawi and Ratib, 1999). Moreover, the researchers "attempt to introduce a characteristic or variable that can change the condition of the sample individuals or the thing that needs to be changed" (Mahgoub, 2002).

The research community consisted of 24 students from the fifth grade of the preparatory stage for the academic year 2023-2024, selected from an original population of 72 students using simple random sampling (lottery). They were divided into two groups: a control group (the conventional curriculum) and an experimental group (the Weitly strategy), each consisting of 12 students.

Before applying the strategy for the research sample, two important steps must be taken: the first is to establish homogeneity among the sample members. The skewness coefficient was calculated to find the homogeneity among the sample members, indicating a normal distribution within the bell curve of the anthropometric measurement variables, as shown in Table .(1)

Table (1) Shows the homogeneity of the sample members

Statistical features / Variables	measruing unit	Arithmetic mean	Mediator	standard deviation	Torsion coefficient
height	cm	171	171.5	1.88	0.525
Bloc	kg	70.33	70.5	1.79	- 0.180
Chronological age	year	17.44	17.5	2.11	0.245

Table (1) shows the values of the mean, standard deviation, and skewness for the anthropometric variables. The mean values are greater than the standard deviations, indicating that there is no dispersion among the research sample individuals. The skewness values ranged between (0.525 to -0.180), meaning they were confined within (± 1), which indicates that they are within the normal distribution**.**
The researchers conducted the exploratory experiment on Monday, February 19, 2024, at 10:00 AM, during the third lesson period, on the volleyball court of Al-Najaf Al-Ashraf Secondary

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P-ISSN: 2073-6452, E-ISSN: 2707-5729
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School for the Distinguished. During this session, the two specific tests for the skills of serving and receiving were applied, in addition to experimenting with all the exercises prepared according to the Wheatley strategy on four students from outside the research sample, but from the same preparatory stage. All observations related to the tests, tools, cameras, as well as the exercises and records related to the educational units were documented**.**

The purpose of conducting the exploratory experiment by the researchers is to identify the following:

- The suitability of the place where the main experiment will take place.
- Ensuring the suitability of the devices and tools used in the tests.
- Identifying the difficulties that the researchers will face in the main experiment.
- Defining the duties of the assisting team.
- Determining the locations for placing the cameras, their height, and their distance from the field of movement for the purpose of filming and presenting it to the experts.
- Applying all the exercises prepared by the researchers to assess their appropriateness and the number of repetitions for each performance.

After that, the researchers conducted the main experiment on Thursday, February 22, 2024, at 10:00 AM, during the third lesson period as indicated in the class schedule, on the volleyball court of Al-Najaf Al-Ashraf Secondary School for the Distinguished. The two specific tests for the skills of serving and receiving were applied, and all conditions for the students were established. The tests were as follows:

Test One / Accuracy Assessment Test for Serving Skill: (Al-Wazir and Taha, 1999, p. 178)

Objective of the test: To evaluate and measure the accuracy of the serving skill.

Tools used: Volleyball court, 5 volleyballs, and colored tape to divide the opposing court areas.

Performance specifications: The tested student stands in the middle of the end line of the court, 9 meters away from the net, holding the ball to perform the serve so that the ball crosses the net into the designated half of the court.

Performance conditions: If the ball touches the net and crosses into the designated half of the court or goes out of the court boundaries, the attempt is counted (from the five attempts).

Recording: The tester receives a score based on the area where the ball lands for each successful serve, with each tester having 5 attempts and the scores distributed across areas from 1 to 4 points, resulting in a maximum score:

The maximum score for this test is 20 points, noting that if the ball lands on a line separating two areas, the tester receives the score for the higher area, as illustrated in Figure 1.

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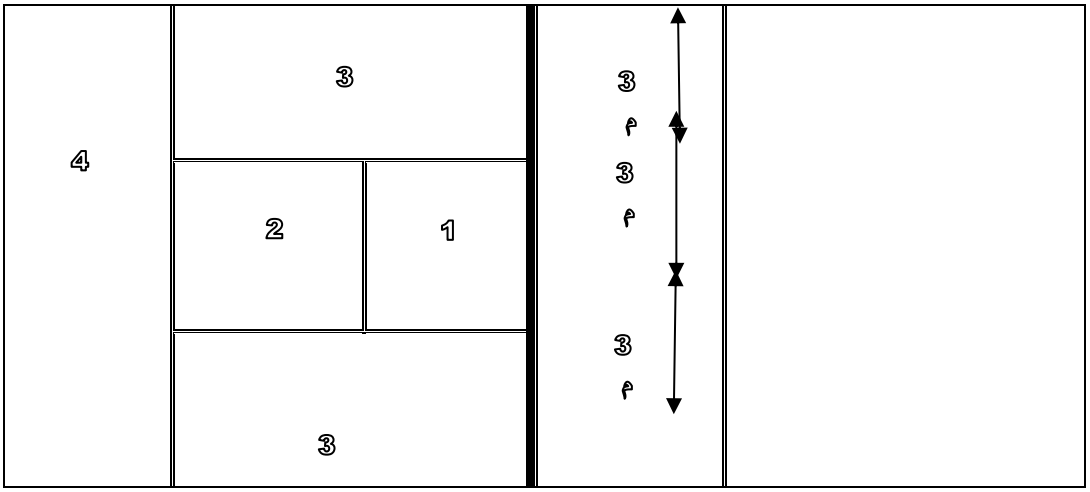

Figure (1) illustrates the measurement of the ability to send to specific areas.

Test Two / Accuracy Assessment Test for Ball Reception Skill: (Al-Wazir and Taha, 1999, page 180)

Objective of the test: To evaluate and measure the accuracy of reception.

Tools used: Volleyballs, a legal volleyball court planned as shown in Figure (2), a table.

Performance method: The tester stands in area (A) and receives the ball from the teacher who stands on the other side of the court, then repeats the same performance from area (B). The tester performs five attempts from each area and must direct the ball to center (2) towards the table where the tester stands (as a target).

Conditions: The tester must adhere to receiving from the designated area and directing the ball to the target.

Scoring: A correct ball directed to the table or target (3 points), a correct ball that touches the edges of the target or table (2 points), a ball that is far from the table or target (zero). Since the scores are distributed across the areas from (zero-3) points from (10) attempts (5 at (A) and 5 at (B)), the maximum score is:

Maximum score: The total score has a maximum limit of 30 points.

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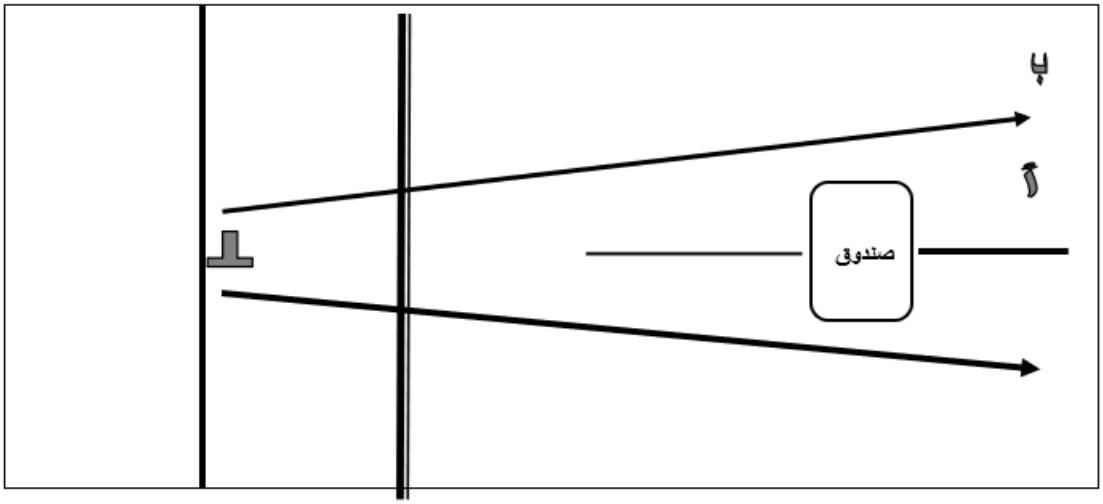

The area is divided into A and B, measuring 3 m x 4.5 m.

Figure (2) illustrates the measurement of the ability to receive the transmission .
Note (1): The teacher should try as much as possible not to vary the serve hits .
Note (2): The performance of both tests is recorded to be presented to the experts, numbering three, for performance evaluation .
The researchers then resorted to verifying the equivalence of the experimental and control groups, "as the researcher should form equivalent groups at least concerning the variables related to the research" (Vandalin, 1985). To control the variables affecting the accuracy of the research results and to attribute the differences in effect solely to the independent variable (exercises according to the Whitley strategy), the researchers conducted the equivalence process between the two groups in the pre-test using the (T-test) for independent samples regarding all the variables investigated in the study, as shown in Table .(2)

Table (2) shows the equivalence process between the pre-tests of the research groups.

Search variables	measr uing unit	Experimenta l group pre-test		Control group pre-test		t	Sig	Type of significa nce
		mean	sd	mean	sd			
Evaluating transmission performance from below	point	4.25	1.65	4.26	1.36	0.415	0.670	Insignifi cant
Accuracy of transmission performance from below	point	10.41	1.45	10.45	1.65	0.491	0.628	Insignifi cant
Evaluation of transmitter reception performance	point	3.24	1.33	3.23	1.22	0.357	0.727	Insignifi cant
Accurate transmitter reception performance	point	15.17	1.06 2	15.19	1.75	0.766	0.459	Insignifi cant

Significant at percentage error ≥ (0.05) In **front of a degree of freedom(22)**

The results shown in Table (2) indicate that the two groups are equivalent in all research variables, as there are no significant differences among the sample members .

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Application of Exercises Using the Wheatley Strategy:

The exercises prepared by the researchers were implemented starting from Monday, February 26, 2024, for a duration of six weeks, with two educational units per week until Thursday, April 4, 2024. The unit on Monday represents the official class for volleyball within the class schedule, while the second educational unit was conducted on Thursday as an additional class agreed upon with the research sample (the experimental and control groups) and the subject teacher after the lessons on that day at 12:15 PM. The researchers ensured that the exercises were tailored to the sample members and worked on a combination of exercises that could help learners understand and grasp the skill after each repetition. The Wheatley strategy consists of three main stages:

1. Task Stage.
2. Cooperative Groups Stage.
3. .Participation Stage.

In the Task Stage, the learner faces a problem or task that needs to be completed, which is engaging for learning and provides the essential requirements for the learner to solve the problem and organizes ideas sequentially to address it .

In the Cooperative Groups Stage, learners are divided into small groups that collaborate, compete, and exchange ideas among themselves, with the teacher encouraging cooperative work among the learners while committing to providing guidance and direction.

However, regarding the participation phase, the entire class transforms into a single group where the students work together to find solutions and changes they have reached through competition and dialogue among the groups, under the supervision of the teacher. The application of the exercises included (12) educational units, with two educational units per week and a duration of (40) minutes per unit. The table below provides details of the educational unit and the program's schedule.

Table (3)
Details of the educational unit supported by images in learning both skills.

Time distribution	the details	ت
5m	View educational images and student tasks in collaborative groups	1
10m	Warm-up and general conditioning is 5 minutes and special conditioning is 5 minutes	2
20m	Practical application of five exercises and each exercise lasts 4 minutes	3
5m	Conclusion	4

A colored illustrated booklet was created containing detailed information for each skill, from its preparatory part to the main part and then the concluding part. This was also presented to the evaluating experts who assessed the students' performance in both tests.

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Volume 36 – Issue (4) – 2024 Open Access

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Table (4)
Time distribution of the educational program.

Notes	Extra class Thursday	Main class Monday	Weeks
This week is devoted to the skill of serving	**2024/2/29**	**2024/2/26**	**The first week**
This week is devoted to receiving the transmission	**2024/3/7**	**2024/3/4**	**second week**
The first unit is dedicated to transmitting and the second unit is allocated to receiving the transmission	**2024/3/14**	**2024/3/11**	**the third week**
One exercise for sending and the other for receiving	**2024/3/21**	**2024/3/18**	**fourth week**
All exercises are common for both skills	**2024/3/28**	**2024/3/25**	**The fifth week**
All exercises are common for both skills	**2024/4/4**	**2024/4/1**	**the sixth week**

After that, the researchers, with the help of the supporting work team, conducted the post-tests after completing the implementation of the WITTE strategy on Monday, corresponding to 8/4/2024. The test was conducted under the same conditions as the pre-tests.

Results and Discussion:

Presentation of the results of the pre and post-tests for the experimental group:

Table (5)
Shows the significance of the differences between the pre and post-tests for the experimental group.

Search variables	measuring unit	The pre-experimental group		Experimental group posttest		t	Sig value
		mean	sd	mean	sd		
Evaluating transmission performance from below	point	4.25	1.65	7.35	1.89	3.69	0.000
Accuracy of transmission performance from below	point	10.41	1.45	13.65	2.03	4.68	0.000
Evaluation of transmitter reception performance	point	3.24	1.33	6.88	2.75	3.87	0.005
Accurate transmitter reception performance	point	15.17	1.062	19.73	1.84	3.46	0.002

Significant at error rate (0.05) and in front of degree of freedom(11)

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Presentation of the results of the pre and post-tests for the control group:

Table (6)
Shows the significance of the differences between the pre and post-tests for the control group.

Search variables	measr uing unit	Control group pre-test		Control group posttest		Calculated t value	Sig value
		mean	sd	mean	sd		
Evaluating transmission performance from below	point	4.26	1.36	6.92	1.51	3.11	0.007
Accuracy of transmission performance from below	point	10.45	1.65	13.22	1.98	3.82	0.002
Evaluation of transmitter reception performance	point	3.23	1.22	6.09	2.11	3.23	0.031
Accurate transmitter reception performance	point	15.19	1.75	17.75	2.00	3.84	0.022

Significant at error rate □ (0.05) and in front of degree of freedom(11)

Presentation of the results of the post-tests between the tests for the experimental and control groups:

Table (7)
Shows the significance of the differences between the post-tests for the experimental and control groups.

Search variables	measr uing unit	Experimental group posttest		Control group posttest		Calculated t value	Sig value
		mean	sd	mean	sd		
Evaluating transmitter performance from below	point	7.35	1.89	6.92	1.51	2.65	0.025
Accuracy of transmission performance from below	point	13.65	2.03	13.22	1.98	1.63	0.517
Evaluation of transmitter reception performance	point	6.88	2.75	6.09	2.11	2.84	0.045
Accurate transmitter reception performance	point	19.73	1.84	17.75	2.00	3.05	0.032

Discussion of the results:

The results in Tables (5) and (6) showed significant statistical differences between the pre-and post-tests for both the experimental and control groups. The researchers attribute this to the exercises prepared for the experimental group (Wheatley strategy) as well as to the exercises prepared by the subject teacher for the experimental group (the adopted method) .

The researchers agree with Saad Mohsen regarding the improvement process for both the experimental and control groups, as he states, "Regardless of the differing opinions from the methodologies of their scientific and practical culture, the training program inevitably leads to the desired development, if based on a scientific foundation in organizing the training process and observing individual differences, as well as using optimal repetitions and effective inter-

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rest periods, under the supervision of specialists in good conditions in terms of place, time, and tools used" (Ismail, 1996), which confirms the improvement of results for both groups .

As for the significance of the differences between the experimental and control groups in Table (7), there were significant differences in three values representing three variables, except for the variable of accuracy in performing the underhand throw, which was not significant.(Kazar & Kazim, 2020)

The researchers attribute the reason for this to the exercises designed according to the chosen strategy that aligns with the age stage of the research sample and to what was applied in the educational units according to the Witte strategy, as it resulted in the development of the technical performance of the students in both skills: underhand serve and reception of the serve. One of the reasons for the significant difference among the group members is due to the repetitions of the prescribed exercises according to the curriculum, which the students perform in the methodological educational units, (Mahmood & Kadhim, 2023) leading to a clear improvement in technical performance. Additionally, the repetitions help to solidify the motor program among the students and expand their perceptions and concepts in order to understand and clarify the skill. These results are consistent with the study by (Mohammed and Hassan, 2010) and the study by (Al-Dihani, 2009), where the results of the first study indicated that verbal explanation and model performance have a positive impact on the educational process, while the other study pointed out that problem-based learning develops learners' skills and enhances this type of learning's ability to think, research, and study, making the learner the center of the educational process and limiting the teacher's role to guidance and supervision. Thus, learners' skills develop through seeking solutions, and this type of learning provides characteristics that assist them in collaboration and leadership.(Easa et al., 2022)

The researchers adopted this strategy, which Muhammad Saad Zaghloul refers to as one of the models based on constructivist philosophy in education and teaching. It begins with tasks that involve a problematic situation that makes learners feel there is an issue, followed by their search for solutions through small, collaborative groups. The education concludes with the groups sharing their findings in a discussion. Accordingly, the model consists of three essential pillars: tasks for collaborative participating groups. (Zaghloul, 2015)

These exercises also contributed, according to the (Witly) strategy, to improving students' creative abilities, emphasizing meaningful learning based on understanding through the active role of students in learning and actual intellectual participation in the activities they engage in within collaborative groups. This led to increased effectiveness in the educational process, which in turn reflected in improved achievement and retention of the scientific material. At the same time, group discussions facilitate students' retrieval of information and knowledge among themselves, (Kadhim, 2023) leading to better retention of information (Muhammad & others, 2021). This result aligns with what "Abu Harja and others, 2001" indicated, that the use of educational technology leads to an increased retention of the information learned by students and solidifies it in their minds, reflecting on the learning process. The teacher achieved communication among learners by moving among them with guidance and direction, clarifying that the goal of this stage is for students to learn from one another and providing opportunities for all students to participate in competition and express their opinions.(Salih et al., 2024)

The researchers attribute the clarity of the differences in the post-test compared to the pre-test among the experimental group to the use of sequential images supported by the Witly strategy,

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P-ISSN: 2073-6452, E-ISSN: 2707-5729
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which was characterized by a rich vocabulary and content of direct and indirect information, its authentic expressive capabilities, and its realism represented in colors and image quality, as well as its ability to represent abstract reality that is difficult to perceive with the senses in a vivid and tangible way. Additionally, (Mahdi & Altay, 2023) it contained links that represent the division of each part of the body and explain the performance of these parts during the overall activity, which helped students comprehend and understand the facts and knowledge related to the performance of each part of the body during the technical stages of sending and receiving skills. All of this undoubtedly provided a good opportunity for students to learn and acquire complete knowledge and information about the skill. (Aldewan, 2015)

Conclusions:

1- The Witly strategy has a positive effect on the development of the technical performance of the sending and receiving skills in volleyball.
2- The strategy, through its steps and the accompanying booklet, contributed to forming an excellent image in the learners, which reflected on their technical performance.
3- The strategy's emphasis on teamwork, cooperation, and participation among students provided them with motivation to enhance learning.

Recommendations:

1- Utilize the Witly strategy in other games and activities due to its positive impact on the learners' technical performance.
2- Conduct workshops on teaching methods to assist physical education teachers in dealing with modern strategies.
3- Employ teaching methods and strategies to engage a large number of students to save time and effort for the instructor and to help develop cooperation, participation, and the exchange of ideas among students.

Appendix(1)
Exercises for transmitting and receiving skills

code	Exercise Content	Educational goal
P1	The learners stand in two groups, each group on the service line, and each learner performs the serving motion without using the ball.	Emphasizing performance correctly with a complete understanding of the performance
P2	The learners stand in two groups, each group on the service line, and each learner performs the serve using the ball.	Emphasizing performance correctly and directing the ball upwards
P3	The learners stand in two groups, each group on one side of the court, and each learner performs after taking a step and then executing the action.	Learning to feel the space and perform correctly
P4	The learners are divided into two groups separated by the net, performing the serve to the partner standing in front of them on the opposite court.	Directing the ball correctly

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code	Exercise Content	Educational goal
P5	Each pair of learners stands in front of the wall and continuously hits the ball against the wall alternately, focusing on wrist movement and fully extending the hitting hand.	Learning the performance and emphasizing wrist movement without hitting the ball hard
P6	Students stand in two groups in front of the net, with serving from group A and receiving from group B, and vice versa	Teaching the skill of sending and receiving
P7	Three servers face three receivers, and the ball is directed randomly to their teammates, followed by a role exchange	Teaching the skill of sending and receiving
P8	Students stand on the side of the court, serving to the wall at a marked point, then running to receive the ball from the wall.	Learning to sense the space and perform correctly
P9	The learners are divided into four groups, each consisting of three learners, and the court is reduced in size using adhesive tape to dimensions of 12m in length and 6m in width. A competitive match time of 5 minutes is allocated for each game	Teaching the performance of the two skills in the presence of a competitor
P10	Two parallel lines are set up where students hold the ball in their hands, rise from a stationary position, throw the ball upwards, and hit the ball into the opposite court.	Feeling the ball at the moment of hitting it
P11	The student performs the technical stages of the serving skill completely, directing the ball to a teammate standing 12m away on the opposite side of the court, and this continues for the other students.	Teaching and controlling the technical stages of performing the serve skill
P12	Learners stand as one group behind the service line, and group members jump over the circles, balancing on one foot in each of the four circles, then performing the diagonal serve skill	Controlling the technical stages of performing the serve skill diagonally
P13	The learners are divided into two groups and stand behind the service line on each side. Upon hearing the first whistle, the learner begins to accelerate (raising the knee), and upon hearing the second whistle, they jump forward, then serve and direct the ball towards the marked square on the opposite court	Teaching the learner balance with accurate serve performance
P14	Each group plays for 5 minutes in a 3-on-3 format, and the exercise requires achieving a 3-point difference for either group	Increasing difficulty by expanding tasks across the full court
P15	Each group plays for 5 minutes in a 6-on-6 format, and the exercise requires achieving a 3-point difference for either group.	Natural play

Note: For each educational unit, 5 exercises are applied for 4 minutes each exercise.

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Appendix (2)

Some educational images according to the Whitley strategy

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