

The effect of the strategy of the supra cognitive learning course in the stability of attention and the accuracy of the skill of tennis serving in volleyball for students

**Lec.Dr.Mahmoud Nasser Radhi⁽¹⁾ ,Assist.Prof. Dr. FirasKahsop Rashid⁽²⁾
,KarrarAbdHadi Hashem⁽³⁾**

⁽¹⁾Faculty of Physical Education and Sports Sciences / University of Kufa,Iraq

⁽²⁾Faculty of Physical Education and Sports Sciences / University of Kufa,Iraq

⁽³⁾Master student .Faculty of Physical Education and Sports Sciences / University of Kufa, Iraq.

mahmoudns.radi@uokufa.edu.iq ,firask.alsultani@uokufa.edu.iq ,
karrartehteh0@gmail.com

Article History: Received: 01 September 2020; Revised: 22 September 2021; Accepted: 31 October 2020; Published online: 10 November 2020

Abstract

The purpose of this paper is to identify the strategy of the supra cognitive learning cycle in the stability of attention and the accuracy of the skill of tennis serving in volleyball for students. The researchers used the experimental approach by designing the two groups equivalents with pre-and post-tests to apply the vocabulary of the strategy of the supra cognitive learning cycle, and the research community was determined to apply the strategy of the supra cognitive learning cycle to the third stage students of the University of Kufa / College of Physical Education and Sports Sciences, for the academic season 2020-2021, whose number is (28) students, and the sample was divided equally into two experimental and control groups, and after conducting the tribal tests, the members of the experimental group began to apply the units prepared by the researchers and continued for eight weeks, in each week three developmental units. The search data was processed through the Statistical Package for the Social Sciences (SPSS). As for the most important conclusions, they are the strategy of the supra cognitive learning cycle prepared by the researchers greatly helped in developing the stability of attention for students, and the time period during which the strategy of the supra cognitive learning cycle was applied greatly helped in developing the tennis skill of volleyball for students. As for the most important recommendations, they are the necessity of using the strategy of the supra cognitive learning cycle in developing aspects of attention for students, conducting similar studies on other individual and team activities, and on different age groups.

Keywords: strategy supra cognitive learning course, strategy attention stability.

Introduction:

Physical education is an important field of education as it prepares the individual for physical, skill, intellectual and psychological preparation, and that many countries and institutions are working to develop their educational programs through the use of new and effective models, methods and methods of teaching to achieve effective teaching.

Today, more than ever, we need teaching and learning strategies that provide us with broad, diverse and advanced educational horizons that help our students enrich their information, develop their different mental skills, and train them to be creative and produce new and different.

It is necessary to pay attention to how the teacher is able to provide a lesson in which he makes the student the center of the educational process, as it is the means that emphasizes the student himself in obtaining the experiences provided by the educational situation, which transfers the focus of attention from the teacher to the student to achieve the desired goals.

This matter is not limited to the theoretical subject, but goes beyond it to the practical subject, which is volleyball, as the weak technical performance of some skills is not necessarily due to a lack of effort and lack of inclination to learn certain activities, but may be due to the strategy or model followed in teaching and then It may be the reason for not reaching the highest levels.

Hence the importance of the research, by using the strategy of the supra cognitive learning cycle and knowing its impact on the stability of attention and the accuracy of the tennis transmission skill with volleyball for students of the third stage of the College of Physical Education and Sports Sciences, as it is necessary to walk in parallel or keep pace with the development taking place in the field of education and teaching methods, It is no longer acceptable for a small group of students to reach the level of competence to keep pace with this successive amount of contemporary scientific developments. Therefore, almost all educators in their various schools and their perceptions agree on a basic principle and an important strategic goal, which is to reach the vast majority of students to a high degree of learning and improve performance.

Research problem:

As the researchers noted that there is a lack of use of educational strategies and curricula that employ aspects of mental operations and that have a major role in the process of learning motor skills for learners to benefit from them in fruitful learning outcomes, so there is an urgent need to use modern teaching strategies that emphasize taking into account students' learning of motor skills, including The strategy of the metacognitive learning cycle, so the researchers sought to choose it, which is one of the strategies that make the learner interested in thinking,

investigation, research and development of his practical skills and the ability to use them in new circumstances. Through the above, the research problem can be summarized in the following question:

Does the use of the strategy of the metacognitive learning course have an impact on developing the stability of attention and the accuracy of the tennis transmission skill in volleyball for students?

Research objective:

- Identify the strategy of the supra cognitive learning course in developing the stability of attention and the accuracy of the tennis serving skill in volleyball for students.

Research hypotheses:

- The researchers hypothesized: that there is an effect of the strategy of the supra cognitive learning course in developing the stability of attention and the accuracy of the tennis serving skill in volleyball for students.

Research fields:

- Human field: It was represented by students of the third stage of the College of Physical Education and Sports Sciences / University of Kufa

- Time field: (1/8/2020) to (10/30/2021)
- Spatial field: The sports hall of the College of Physical Education and Sports Sciences / University of Kufa.

Research methodology and field procedures:

Research Methodology:

The researchers used the experimental method because it fits with the nature of the research problem, and by designing the method oftwo groups equivalents(experimental and control) with pre and post-tests.

Community and sample research:

The research community was identified with students of the third stage of the College of Physical Education and Sports Sciences / University of Kufa, for the academic season 2020-2021, whose number is (28) students, and they were divided into two equally control and experimental groups, as the experimental group used the strategy of the metacognitive learning cycle, as for the control group, the usual strategy was used by the subject teacher.

Devices, tools and means used in the research:

Means of data collection:

- Arabic and foreign sources and references.
- Personal interviews.
- Tests and measurements.

- Special forms for recording the results of the tests for the players.

Tools and devices used:

- The legal volleyball court.
- Cones (10).
- Rings with a diameter of (50 cm) number (10).
- An electronic device for measuring height and weight.
- Flying balls (10) of a type (Molten).
- Polish (1) Dell laptop.
- Whistle (2) type (Fox).
- Measurement requirement in centimeters.
- Tombstones (20 cm) high, number (10).
- Wooden targets measuring (40 x 40) cm, number (4).
- Sports stopwatch number (3).

Field research procedures:

Tests and measurements used in the research:

Test (Landolt) to measure the stability of attention: ⁽¹⁾

The (Landolt) choice to measure the stability of attention (see appendix (1)) is a sheet of paper containing (15) lines consisting of loops whose slots point to different directions, and the paper is usually divided into three equal

sections, each section contains (5) complete lines of loops (each line It contains twenty episodes) meaning that the choice contains (300) episodes, and the test episodes were elaborately developed and taken into account in their position to be irregular in distribution to avoid the possibilities of memorization, the test is explained to judge by a note to the paper and as follows: -

- The clock is stopped the moment the tester player finishes this part.
- The referee records the number of circles that have been crossed out, as well as the time spent in performing the first part.
- The referee gives a rest of (15) seconds.
- The previous work is repeated on the second five lines (to calculate the second part of the test) and the recording is done in the same way (number and time)
- The previous work is repeated on the third five lines (to calculate the third part of the test) and the recording is done in the same way (number and time), and thus the test is over.
- Method of calculating work output:-

The work output (x) is calculated for each of the three stages of the test according to the following equation:

The result of the work of the first part (x_1)

$$\frac{(0.436) \times \text{the number of correct loops in the part} - (0.708 \times \text{the number of errors in the part})}{\text{performance time}}$$

And the same is the case with the product of the work of the second part (x_2) and the product of the work of the third part (x_3), and stability is calculated according to the following equation: -

$$\text{Stability of attention} = \frac{\text{Standard deviation of } (x_1, x_2, x_3)}{\frac{x_1 + x_2 + x_3}{3}}$$

Accuracy evaluation test for the skill of serving from above (tennis): ⁽²⁾

- The objective of the test: to measure the accuracy of the serving skill.
- Tools used: a legal volleyball court, (5) legal volleyballs, and a colored tape to divide the areas of the opposite court.
- Performance specifications: The test student stands in the middle of the final line of the playing field, at a distance of (9) meters from the net.
- Performance conditions: In the event the ball touches the net and

crosses into half of the planned playing field or goes outside the playing field, an attempt is counted for the tested student (out of the five attempts).

- Recording: The student takes the score of the area in which the ball is located for each correct serve, and since each student has a laboratory (5) attempts, and because the scores are distributed over the regions from (1-4) degrees, the maximum score for this test is (20) degrees, noting that in the case of the Fall of the ball on a line separating two areas is calculated for the test student, the degree of the highest area, as shown in Figure (1)

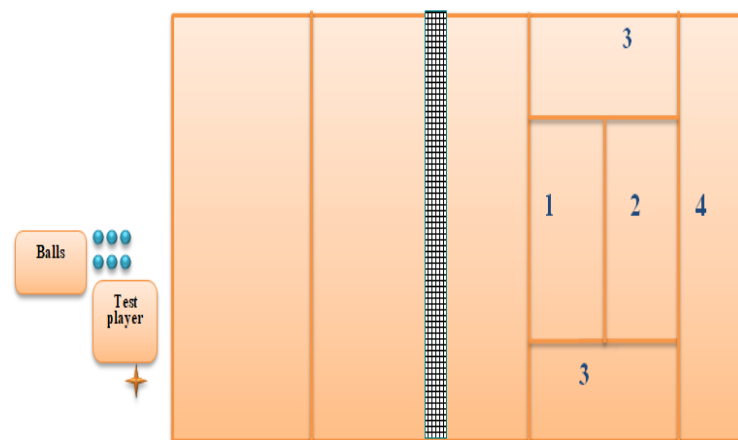


Figure (1) shows the accuracy assessment the skill of the serving from above (tennis)

The exploratory experience of the tests used in the research:

The exploratory experiment was conducted on 2/8/2020 at ten in the morning in the hall of the College of Physical Education and Sports Sciences / University of Kufa on a sample of (8) players from the research community. The aim of this experiment was as follows:

- Ensure the validity of the playing field and the tools used and their suitability for the tests.
- Identify each exercise used in the educational units.
- Knowing the response of the research sample to the tests.
- Practical training for researchers and the auxiliary work team, to find out the negatives and positives that accompany the application of the tests in terms of requirements and method of work.
- Knowing the field difficulties that researchers may face during the application of the exercises in the educational units.

Main experiment procedures:

Pre-tests:

The researchers conducted tribal tests on the research community for the two groups (control and experimental) for the study variables on (Wednesday, 5/8/2020).

Preparing and implementing a strategy for the cognitive learning cycle:

The researchers prepared the strategy, as the lesson begins after the students arrive in the hall, they hurry to change their clothes and prepare for the lesson. The salute begins, then the warm-up and physical exercises, after which the teacher begins to apply the educational part of the main section for a period of (20 min). In which the steps of the educational curriculum are applied according to the strategy of the metacognitive learning cycle prepared by the researcher according to the following steps: -

First: the exploration stage: in this stage, the teacher must give the students the opportunity to reflect on their scientific ideas and identify the information that the students have about the concept they are about to study the skill of tennis transmission in volleyball, and the goal of the exploration stage is to give the learner the opportunity to explore the phenomena related to the skill of tennis serving with the ball. The plane that is under search, the questions at this stage, which the student must train to ask himself, are:

- What are the main ideas in this situation the skill of overhand serving in volleyball?
- Do I need to do a specific thing or activity to understand my skills (tennis serving) in volleyball?

- What are the questions that I am likely to face in my skill (tennis serving) in volleyball?
- Students record the answers to these questions in their own record

Second: Examination of the concept presentation status:

At this stage, the teacher must collect the data produced by the students and reach through that data with the students my skills (tennis serving) in volleyball. Also, the teacher must give the students the opportunity to reconsider their scientific ideas and concepts and reflect on any changes that have occurred in their ideas. Among the questions that students face at this stage are:

- Is the concept of my skill (Ace) in volleyball clear in my mind?
- Are your observations and conclusions correct?
- Can I give a definition of the concept my skill (Ace) in volleyball?
- Students record the answers to these questions in their own record.

Third: Examination of the application status of the concept:

At this stage, students are faced with other examples, such as the application of the scientific concept, the skill (tennis serving) in volleyball, which can be understood using the data produced during the previous stages. Stage:-

- How did I benefit from this concept of my skill (tennis serving) in volleyball in the volleyball lesson?
- Is it easy to apply this concept to my skill (tennis serving) in volleyball in any new situation?
- Can I apply the concept of my skill (tennis serving) in volleyball in public life situations?
- Students record the answers to these questions in their own record.

Fourth: Examination of the evaluation status of the concept:

At this stage, the students reflect on their scientific ideas. Each student must keep a record of the concept, my skill (tennis serving) in volleyball, in which he records his scientific ideas about the concept. If the student's idea is reasonable and clear, he must be able to:

-
- Give or provide examples of the concept of my skill (tennis serving) in volleyball.
- Interpreting his idea to his classmates.
- The concept of my skill (tennis serving) in volleyball is reasonable if:
 - It is consistent with or consistent with other ideas or things that I know or believe in.
- 4- A concept is fruitful if it:
 - A- It helps in solving problems.

- b- It gives new ideas for further research.
- C - Has advantages and benefits in the real world.

Among the questions that the student faces at this stage:

- How proficient is my skill (tennis service) in volleyball?
- What are the strengths and weaknesses in my performance of my skills (tennis service) in volleyball?
- Did my study of this subject my skill (tennis service) in volleyball adds anything new to me?
- What can I do to overcome the weaknesses of my skill (tennis service) in volleyball?
- Students record the answers to these questions in their own record.

Each educational unit contains the following:

- The preparatory section (25) minutes: (3) for the organizational side, (7) for the general preparation, (15) for the special preparation.
- The main section (60) minutes: of which (20) minutes are for the educational part, and it includes explanation and presentation of the visual and video skill, drawings and illustrations for the skill, and (40) minutes for the practical part, in which he applies exercises to the shapes, images

and videos that he learns by himself as he applies the skills that were explained in the tutorial section.

- The closing section (5) minutes: it includes calming and relaxation exercises with collecting tools and leaving.

Post-tests:

The researchers, with the help of the assistant work staff, conducted the post-tests of the research community after the completion of the implementation of the strategy of the supra cognitive learning cycle, and on (Wednesday) corresponding to (28/10/2020), as the researchers took into account the same conditions in which the tribal tests were conducted in terms of the sequence of tests.

Statistical methods:

The search data was processed through the Statistical Package for the Social Sciences (SPSS).

Presentation, analysis and discussion of the results:

Presenting the results of the pre and post-tests for the control and experimental groups for the variables under study:

Table (1) shows the arithmetic means and standard deviation in the results of the two tests, pre and post-tests for the control group for the variables under study.

Variables	Measuring unit	Pre-test		Post-test		T value	level Sig	type Sig
		Mean	standard deviation	Mean	standard deviation			
stability of attention	degree	0.708	0.095	0.488	0.036	8.22	0.000	sig
accuracy of the tennis serving skill	degree	7.75	1.125	10.5	1.264	6.822	0.000	sig

Table (2) shows the arithmetic means and standard deviation in the results of the pre and post-tests of the experimental group for the variables under study.

Variables	Measuring unit	Pre-test		Post-test		T value	level Sig	type Sig
		Mean	standard deviation	Mean	standard deviation			
stability of attention	degree	0.711	0.062	0.378	0.044	22.843	0.000	sig
accuracy of the tennis serving skill	degree	12.5	1.414	19.187	1.108	11.928	0.000	sig

Table (3) shows the arithmetic means and the standard deviation in the results of the post-tests of the control and experimental groups of the variables under study.

Variables	Measuring unit	control		experimental		T value	level Sig	type Sig
		Mean	standard deviation	Mean	standard deviation			
stability of attention	degree	0.488	0.036	0.378	0.044	8.24	0.000	sig
accuracy of the tennis serving skill	degree	10.5	1.264	19.187	1.108	9.258	0.001	sig

Discuss the results:

Through what was presented in Tables (1 and 2), we note that there are significant differences in the tribal and

remote tests in favor of the members of the control and experimental groups and in favor of the post-tests. And the dimension, including repetition and feedback, as they had an effective role, as the feedback in the strategy followed by the subject teacher is given directly to the learners during the performance, and it can be given at the end of the educational unit, and this was confirmed by (Ali Al-Diri and Ahmed Batanieh) "after the end of the application period In preparation for the end of the unit, the teacher or coach corrects the mistakes of the learners or players" ⁽³⁾, and this was also confirmed by (Schmidt) "that feedback increases the energy and motivation of individuals, promotes correct performance and avoids wrong performance" ⁽⁴⁾.

The researchers also attribute the reasons for these differences to others that contributed to the process of improving learning, including following the principle of gradualism in learning motor skills as well as practice, as continuing to repeat the skill helps learners to increase their motivation and then have positive effects in the learning process.

While the significant differences shown by the above tables for the members of the experimental group are attributed by the researchers to using the strategy of the supra cognitive learning cycle in terms of planning and implementing the educational units, as the exercises developed by the researchers using the strategy of the

supra cognitive learning cycle have moved the learners from the classical pattern that makes them recipients of information Which the teacher puts forward to the modern style based on asking the question and making the learners choose the appropriate solutions, and this is what motivated the learners to respond to this strategy, trying to succeed, to prove their abilities, assert themselves, and prove their capabilities, which are often viewed with inadequacy and indifference. Tennis serving in volleyball, in addition to the reasons for these differences due to the new educational situations that the learners were exposed to, which are characterized by the clarity of the goal and what the learners are required to achieve, and it was not customary in the usual educational units,,which led to a clear improvement in their performance, and this is what was indicated by (Fouad Suleiman Colada) "The clarity and identification of goals in the light of certain behaviors or performance levels, they are meaningful and effective ⁽⁵⁾, and the interaction between the members of one group and their active discussions about the task the learning they do has an impact on their understanding of the educational material.

The researchers attribute the reason for the development of the experimental group to the various exercises that were applied by the research sample throughout the duration of the curriculum. This difference made the difference, as the exercises

developed by the researchers contributed in turn to preparing the players to perform these moves, which led to an increase in the ability to mental abilities with skill performance. The exercises that were applied with a strategy The prepared supra cognitive learning course focuses on the strength and speed of the striking arm because the nature of the tennis serve performance in volleyball requires speed and strength, as well as an awareness of distance and place to direct the ball to the appropriate place on the opposite court.And the superiority of the experimental group over the control group in the stability of attention and tennis transmission in volleyball is also due to the use of the supra cognitive learning cycle, which allows the learner to take sufficient time to learn according to his own capabilities and abilities and in the way of presenting the educational material and this is consistent with what he mentioned (Dhafer Hashem, 2002) One of the natural phenomena of the learning process is that there must be developed in learning as long as the teacher follows the steps of the sound foundations of learning and teaching, and for the beginning of learning to be sound, it is necessary to clarify the explanation, presentation and exercise on the correct performance and focus on it until the solidification and stability of performance, and providing the learner with The feedback increases the learner's motivation and motivates to perform correctly with desire and enthusiasm" ⁽⁶⁾.

The presentation of the educational material, whether in written text, static and moving images, or video clips, enables him to use more than one sense in the learning process, and this has contributed in an influential way to the diversity of knowledge sources and the increase in opportunities for good learning. This improvement in the technical performance and accuracy of the skill of tennis serving in volleyball came as a result of moving away from the norm in education by using the supra cognitive learning cycle that has the role in making the learner the focus of the educational process and his performance is organized and arranged according to the steps of the strategy in addition to the use of various situations, and continuous guidance from the observers who supervise the performance of these exercises, which helped reduce the mistakes that the learner might make in performing the exercises during the educational unit.

The researchers also attribute this to the time of using the metacognitive learning cycle that they prepared, which had a significant impact on making the kinesthetic learning process more effective and positive through strategies that provided the learner with the opportunity to be an active element in the educational process. This is what was indicated by (Mohammed Mahmoud, 1999) "When the curricula are implemented according to the allotted time effectively, the general performance of the student improves a

lot and then provides a better level of performance"⁽⁷⁾.

As well as following the steps of applying exercises after their explanation and presentation using educational means and training on tennis serving, and providing learners with feedback continuously, which increases learners' motivation and leads them to the accuracy of skill performance, as well as its independence in making decisions about its performance. Teaching aids work to achieve communication and transfer educational goals from the teacher to the learner, and they increase the effectiveness of the learning process and improve it, and motivate learners to more participation in educational situations and make it interesting to participate in more and continue learning, and they facilitate the process of remembering by recalling information, and this helps to acquire a kind of fixation of motor programs in the minds of the learners as a result of the time that the program took, which led to the first beginnings of acquiring a kind of experience, and this is another and important factor in developing the level of learners, so it is mentioned both (liba)⁽⁸⁾ and (mohr)⁽⁹⁾ "Training for a specific period leads to an improvement in accuracy, and that experience is directly proportional to accuracy."

The researchers also attribute the reason for the superiority of the experimental group over the control group in sensorimotor perception to the that the curriculum prepared according

to the supra cognitive learning cycle and competition contributed to achieving educational goals through the learners' implementation of motor duties to perform tennis transmissions in volleyball, as he confirms (Mustafa Abdel Kawi, 1987) that "the teacher's knowledge of the different methods of learning is of great importance to know how learning takes place and which methods are most effective in organizing educational materials and delivering them to the student" ⁽¹⁰⁾.

Also, this strategy strengthened the mutual relationship between the teacher and the learner and gave the learner an active role in the completion of the educational process, in contrast to the adopted method, giving a role of freedom in discovering the skillful performance himself and applying what discovered practically through thinking, then visualizing the correct performance, which subsequently leads to the realization then creativity in performance, and this is supported by what I mentioned (Elham, 1997) "Doing a study of the psychological aspect is of great importance for every activity, as it is expressed through willpower, responsibility, control and self-confidence, which helps to achieve the desired goals, reveal distinctive features and identify on the positive and negative, it is beneficial to the development of the level and superiority" ⁽¹¹⁾, which enhanced the position of the learners in terms of knowledge and made them able to think

and develop solutions and replace them in the event that they were not applied in the field, and all of this made the information focus in the service of generating ideas and choosing the best ones in line with the state of the stimuli that could appear as new variables and deal with them based on the playing situation, On this basis, the learners must be familiar with the fields of scientific knowledge to enable them to deal with all the circumstances they face in the matches and deal with them in the best way and to create the best solutions to the problems that hinder the process of winning or education, as well as studying all that is negative and revealing its causes and standing on them and developing and strengthening all that is positive And benefit from it, and this scientific knowledge helps him to analyze and develop everything that characterizes the game, and then enables him to have the ability to think soundly and act well.

Conclusions and Recommendations:

Conclusions:

Based on the research results that were reached within the limits of the research community, the following conclusions were reached:

- The strategy of the supra cognitive learning course prepared by the researchers greatly helped in developing the stability of attention and the accuracy of the skill of tennis serving in volleyball for students.

- Also, the period of time in which the strategy of the supra cognitive learning cycle was applied greatly helped in developing the skill of tennis serving in volleyball for students.
- The experimental group that used the strategy of the supra cognitive learning cycle was superior to the control group in the stability of attention and the accuracy of the skill of tennis serving in the post-tests.

Recommendations:

- The necessity of using the strategy of the supra cognitive learning cycle in developing aspects of students' attention.
- Confirmation of the use of the strategy of the supra cognitive learning cycle in teaching applied subjects because of its role in developing effective education, creating an atmosphere favorable to learners and creating their motivation for the learning process.
- Conducting similar studies on other individual and collective activities, and on different age groups.

Reference:

- Mohamed Sobhi Hassanein, Hamdi Abdel Moneim: (1997); The scientific foundations of volleyball, methods of measurement and evaluation, 1st floor, Cairo, Dar Al-Kitab Publishing, p. 450.
- Nahida Abdel Zaid Al-Dulaimi and others: (2015); Modern volleyball and its specialized requirements, 1st Edition, Beirut, Dar Al-Kutub Al-Ilmia, pp. 86-87.
- Ali Al-Diri and Ahmad Blaniyah: (1987); Methods of Teaching Physical Education, (Irbid, Al-Amal Press), p. 66.
- Schmidt, A. Richard and Graig Wrisberg: (2000) ; Motor Learning and Performance, (U.S.A. Human Kintics, Second Edition,), p. 282
- Fouad Suleiman Qalada: (1989); Educational Objectives and Curriculum Training, Alexandria, New Publications House , p. 177.
- Dhafer Hashem Ismail: (2002) The Interdisciplinary Teaching Method and Its Impact on Learning and Development through Spatial Organizational Choices for the Tennis Teaching Environment, PhD thesis, College of Physical Education, University of Baghdad, p. 102.
- Muhammad Mahmoud Al-Hila: (2001); The basics of designing and producing educational aids, (Amman, Dar Al-Maysara for Publishing and Distribution), p. 30.
- Liba, Marie R. : (1971); Effects of activity in Larson, Leonard A. and Herrmann, (Donald E. (eds).

- (3) Encyclopedia of sport sciences and medicine, New York: the macmillan company), P. 172.
- Mohr d. r : (1960); the contributions of physical activity to skill learning. (Research quarterly), p.321
 - Mustafa Zain al-Abidin and others: (1982); Evaluating the process of applying the fourth stage in the College of Education, University of Basra, Journal of the College of Education, University of Basra, Issue Seven, Fourth Year, p. 272.
 - Elham Abdel Rahman Mohamed: (1997); Some Important Requirements in the Sports Excellence of Volleyball Among School Sports Teams, The Scientific Journal of Physical Education and Sports, Cairo, p. 2

Appendix (1)

Shows stability of attention

