

The impact of the five-cycle learning strategy using some mental maps in learning the skill of reception and preparation in volleyball

AHMED KHALED AWAD ✉, ZINA HASSAN AMR

Department of Physical Education and Sports Sciences, Al Maarif University College, Iraq

ABSTRACT

The study aims to use a new strategy applied through the preparation of special educational units using the strategy of the five-year learning cycle, which is helpful in learning the skills of preparation and reception in volleyball. The article utilized the experimental method for its relevance to the research problem nature. The research sample was represented by students of the second stage in the Department of Physical Education and Sports Sciences - College of Knowledge University. Their number was (130) students divided into two groups, the first experimental group using the strategy of the five-year learning cycle, and the second control group using the adopted method. By the teacher of the subject, the skills of preparation and reception were chosen in the flying way, and the selection of appropriate tests for these two skills. The tools and means used, and then the tribal tests through which the equivalence was conducted. Then the main experiment was applied by applying the educational units to the experimental group. Then the researcher conducted the post-tests and the use of statistical means. The conclusions reached by the researcher were that there is a positive effect of using the cycle strategy The quinquennial learning in learning the skills of preparation and receiving the transmission with volleyball for students. There was an effect of the educational units that were developed for the stages of the strategy of the five-year learning cycle for the skills of preparation and reception with the ball the plane.

Keywords: Performance analysis of sport, Volleyball, Five-cycle learning strategy, Mental maps, Reception.

Cite this article as:

Awad, A. K., & Amr, Z. H. (2023). The impact of the five-cycle learning strategy using some mental maps in learning the skill of reception and preparation in volleyball. *Journal of Human Sport and Exercise*, 18(2), 346-355. <https://doi.org/10.14198/jhse.2023.182.06>

✉ **Corresponding author.** *Department of Physical Education and Sports Sciences, Al Maarif University College, Iraq.*

<https://orcid.org/0000-0002-0359-871X>

E-mail: marinaavas22@gmail.com

Submitted for publication May 11, 2022.

Accepted for publication June 13, 2022.

Published April 01, 2023 (*in press* August 05, 2022).

JOURNAL OF HUMAN SPORT & EXERCISE ISSN 1988-5202.

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doi:10.14198/jhse.2023.182.06

INTRODUCTION

As a result of the scientific development that has occurred on all educational and educational systems in order to face the difficulties that result from it, especially in the sports aspect, it needs new strategies to facilitate the process of learning and teaching and for the teacher to make the student in active thinking through acquiring information and concepts from the environment that surrounds him, as well as how to obtain On this information through the performance of the actions, dialogues and discussions between the teacher and the student as well as the students with each other through the questions that the teacher asks the students and their evaluation, and then the teacher guides the students and that the correct information is built by linking the previous information with the new information (Ottoboni et al., 2021; Martins et al., 2021). As a result of this, it was found that it was necessary to make several attempts to crystallize the strategies that the teacher works with during the lesson, as it depends on the student confronting the facts, information and educational situations, and this is through the strategy of the five-year learning cycle, which consists of the stage of preoccupation or preparation. At this stage the students learn about the educational task for the first time, they link past and existing learning experiences with the exploration stage: where the student engage in conducting a duty, or an activity utilizing materials and tools, and in groups, and the teacher's role is to facilitate and facilitate and the interpretation or explanation stage: the interpretation stage is less student-centred and provides the learner with cognitive comprehension, and aims to make the teacher direct the students' thinking so that they build these concept in a cooperative way and the expansion stage: the expansion is centred on the learner and aims to help the learner to mentally organize the experiences he has obtained by linking them to similar previous experiences. Assessment stage: In this step, constant assessment is deployed and at particular points students shall receive a review of the properness of their interpretations and is not confined to evaluation at the end of the chapter.

The five-year learning cycle is a method of learning and teaching in which the students themselves carry out the process of investigation that leads to learning, as seen by the constructivists (Xu and Liu, 2021).

Other strategies that may contribute time and effort to the learning process and facilitate the work of the steps of the five-year learning cycle and the usefulness of concept maps for the educational process. As well as organizing the content of the scientific material.

Mental maps are defined as: *"a set of concepts organized in a hierarchical manner, in the light of horizontal relationships that link sub-concepts that are on the same level of generality, and vertical relationships starting from the main concept to the less general concepts, where sub-concepts are linked in the horizontal direction, and in the vertical direction with arrows written on them certain association words that give meaningful expressions between the two-forming concepts"*.

Since volleyball can be considered one of the group football games that includes a lot of motor skills, it should be learned according to the content of each skill and the performance movements it contains and in the manner and style that suits and facilitates learning, and the student who learns it also needs to focus and think free of distractions and to reconcile the work of the two devices The muscular and the nervous system harness the previously acquired knowledge and use it to improve neural control and then there is a change in the meaning of the educational situation as a result of this experience. Also, you need to diversify your methods. where the serve receiving skills and preparing are among the first basic skills in volleyball, as well as these two skills included the theoretical side and the practical side, so you need the learner to memorize and remember and then perform the exercise through the motor path of the skill, which makes the learners memorize the theoretical material and then apply it through the activities And physical and skill exercises, as

it was necessary to search for ways and models that could help develop the learning process for the skills of transmitting reception and preparation. It becomes clear to us that the research problem was determined in the researcher's note to Hence the importance of the research to eliminate the impact of the strategy of the five-year learning cycle and using some mental maps through learning the skills of receiving transmission and preparing for volleyball among students of the Al Maaref University college, private college in its morning and evening departments, the Department of Physical Education and Sports Sciences, and the preparation of educational units by adopting the five-year learning cycle using mental maps (Conejero Suárez et al., 2020; Fortin-Guichard et al., 2020).

Research hypotheses

- 1- There are statistically significant hypotheses between the results of the tribal tests and the results of the post-tests for the two groups (experimental and control) in learning the skills of reception and preparation in volleyball.
- 2- There are statistically significant hypotheses between the results of the post-tests between the two groups (experimental and control) in learning the skills of reception and preparation in volleyball.

MATERIALS AND METHODS

To achieve the objectives of the research, the researcher used the experimental method to suit the research problem.

Community and sample

The research community is one of the things that must be taken into account in scientific research to choose a sample that represents the original community honestly and truly, as the process of selecting the sample is closely related to the nature of the community from which it is taken, being the part that represents the community of origin that the researcher conducts the whole and the focus of his work on.

The research community was identified with students of the second stage / morning / in the University College of Knowledge, Department of Physical Education and Sports Sciences, which amounted to 130 students for the academic year 2020-2021. Experimental, and the researcher verified the equivalence of the two research groups in the investigated variables, and Table 1 shows that.

Table 1. The equivalence of the two research groups in the studied variables.

Variables	Experimental group			Control group			Value of T	Sig.	Statistical significance
	No.	S/	A	No.	S/	A			
Numbers	20	1.89	0.299	20	1.91	0.271	0.777	.365	Not substantial
Transmitter receiver	20	2.48	0.752	20	2.58	0.643	0.322	.159	Not substantial

Note. * Significant if sig. \leq .05.

The Skill Tests

The preliminary test: Receiving the ball with the arms from the bottom.

The test's purpose

Measuring performance skill level of the transmitters receiving skills with the arms from the bottom by experts.

Tool used

The volleyball court is legal, (3) volleyballs, a tape measure, the playing field is prepared as shown in the figure. A circle is drawn in the middle of the court in the back area, as the distance between the centre of the circle and the side line is (4.5) m, and the distance between its centre and the offensive line (3) m, while the distance between the centre of the circle and the end line is (3) m, and the distance between the centre of the circle and its circumference is (1.5) m, and its diameter is (3) m, as in the Figure 1.

Performance specifications

The laboratory stands inside the circle facing the net, and the coach must send the ball to him while he is in receiving place, given that he directs it inside the frontal area. Each laboratory is given three attempts.

Recording

The performance of the tester is evaluated in the triple attempts by experts, and the degree division is as follows:

A - preparatory part: (3) degrees.

B- The main part: (5) degrees.

C- The closing part: (2) degrees.

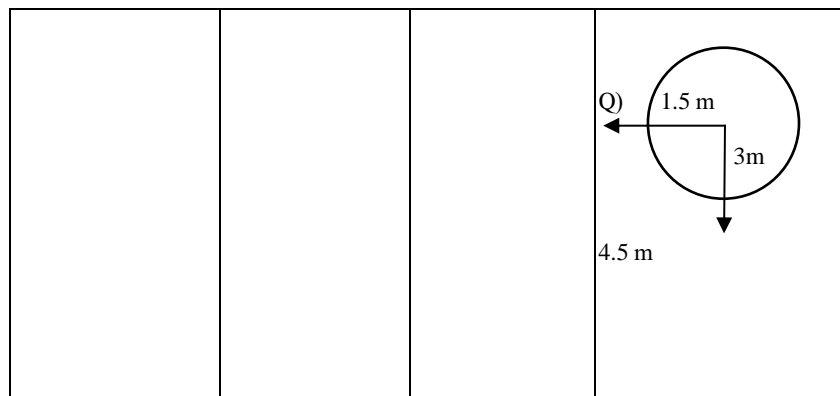


Figure 1. Preparation of the playing field (first test).

Second test: Preparation for position (2) and (4)*The test's purpose*

Measuring the performance skill level of the skill of preparation from front the head's front to the front by experts.

Instruments

Up to specifications volleyball court, volleyballs, a measuring tape, the court is prepared as shown in Figure 2 as two rectangles (A-B) are divided into the back area, each of which has an area (3 x 4.5) m allocated for the coach to stand in it and pass the ball to the moderator.

Implementation specifications

The moderator is in third centre in which the coach stands in area (A) passes the ball to him while he is in the preparing place it and direct it to second centre, as the moderator is given triple attempts to this centre and then gives triple attempts Another set to be prepared and directed to the 4th centre after the ball is passed to him from the coach who is in the area (B).

Recording

The moderator is evaluated in six attempts by experts, and the degree divisions is as follows:

a. Preparatory part: (3) degrees.

NS. The main part: (5) degrees.

NS. The final part: (2) degrees.

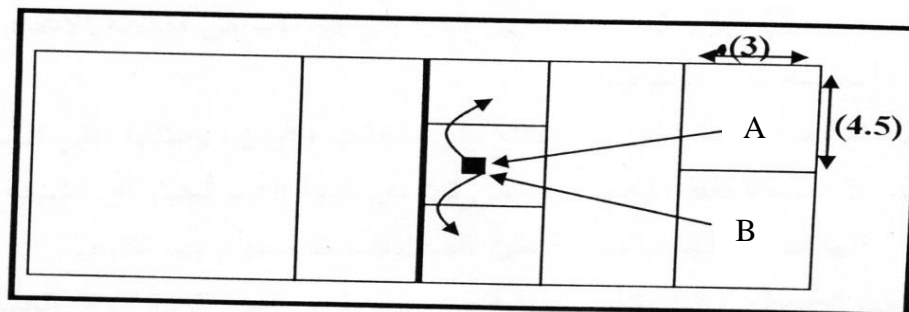


Figure 2. Preparation of the playing field (second test).

Pre-tests

The researcher conducted the tribal tests of the preparation and reception skills in volleyball for the control and experimental groups on Saturday, October 17, 2020 at nine o'clock in the indoor hall of the volleyball court at the University's Al Maaref University college, with the subject teacher of volleyball and the assistant work team, under the supervision of the researcher.

Instruments and devices used in the research

- Video camera.
- Arab and foreign sources.
- International Information Network (Internet).
- Legal volleyball court with all playground equipment.
- Flying balls (10).
- One (1) whistle.
- Data dump form.
- Data registration form.

Statistical treatments

The researcher used the statistical package program (SPSS) to treat the data statistically.

Post-tests

The researcher conducted post-tests for the preparation and reception skills in volleyball on Saturday 23/12/2021 after completing the application of the educational units of the main experience.

The scientific basis for the tests

Honesty coefficient

To verify the ability of the tests to measure the quality for which the measurement was set, the researcher used the validity of the content, by displaying a questionnaire to explore the experts' opinions about the tests' validity for the research sample.

Stability coefficient

For the purpose of verifying stability, the researcher repeated the tests, which happened on Sunday, 19-1-2020, on the same exploratory sample, as the period of repetition did not exceed (7) days. As shown in Table 2.

Table 2. Authenticity, reliability, and objectivity.

Tests	Honesty coefficient	Stability coefficient	Statistical significance	Objectivity coefficient	Statistical significance
Numbers	89%	0.882	Substantial	0.926	Substantial
Transmitter receiver	87%	0.895	Substantial	0.914	Substantial

RESULTS AND DISCUSSION

By processing the data in order to reach the scientific bases to achieve the goals and research hypotheses obtained by the researcher, through the strategy of the learning cycle on some second year students in the College of Physical Education and Sports Sciences, as I got acquainted through these results with the levels of students in learning some basic skills with the ball The plane and the impact of the five-cycle learning strategy using mental maps and increasing suspense during the lesson.

Presentation, analysis and discussion of mathematical means, common deviations, and computed T-values for both the pre and post-tests.

Presentation, analysis and discussion of the arithmetic means, standard deviations, and (t) values calculated for the experimental and control groups in the post-test.

Table 3. The arithmetic means, standard deviations and the calculated t-value between the pre- and post-test of the experimental group in the studied variables.

Variables	Pre-test		Post-test		S/F	AF	Value of T	Sig.	Statistical significance
	S/	A	S/	A					
Numbers	1.86	0.297	6.65	1.955	3.80	1.988	10.879	.000	Substantial
Transmitter receiver	2.45	0.752	7.93	1.880	5.47	2.655	9.240	.000	substantial

Note. *Substantial if sig. \leq .05.

Table 3 shows that the mathematical mean of the pre-test for the preparation skill for the experimental group was (1.86) with a standard deviation (0.297), and the mathematical mean in the post test was (6.65) with a common deviation (1.955). The number skill reached (10.879) with an error level (.000), which is less than .05 which means that there are significant differences between the pre and post-test for the two experimental groups and in favour of the post-test, and that the arithmetic mean of the tribal test of transmitter reception skill for the experimental group amounted to (2.45) with a standard deviation (0.752), and the arithmetic mean in the post test reached (7.93) with a standard deviation (1.880) as well. It shows that the value of t calculated for the significance of the differences between the pre-test and the post-test of transmitter reception skill amounted to (10.879) with an error level (.000) which is less than .05. This means that there is more than one significant difference between the pre and post-tests for the two experimental groups favouring the post-test.

The researcher attributes the improvement in learning the reception and preparation skills in volleyball due to the use of the five-cycle learning strategy by teaching (the five-cycle learning strategy), which allows the learners to freely choose the method or method of learning, and to the safety of the educational units and their containing of a set of exercises that are not similar to the control group and the selection of Exercises in a scientifically correct manner in line with the ability of individuals, “*Training and practicing a specific skill within a motor duty leads to an increase in experience and development in muscular, physical and skill ability, so practice is the most important variables in the learning process for complex and even simple skills*”.

This is indicated that “*the effectiveness of the strategies helps in raising the level of academic achievement and developing some learning skills*” (De Waelle et al., 2021).

Using some mental maps that give a complete picture of the skill’s performance, and thus the student stores this image in the brain to be recalled later because it corrects previous information and links it to latest information as well as increases understanding and memorization for students. In particular, mental maps work to stimulate the senses as well as mental processes such as thinking And understanding, memorization and remembrance of the learners through the questions that the teacher asks to the students, as well as the skill exercises that are employed in the educational units in accordance with the level of the sample in order for the learners to perform the best methods and maps that are used in an easy and clear manner which helped to increase the motivation in learning because it presented the learning material in an easy and interesting way. It is known that the basic skills of volleyball need to be learning its skill exercises from easy to difficult and this suits the level of students.

Where do Amaral Machado stresses that mental maps: (they are a set of concepts in a subject that are arranged in a hierarchical manner so that the general or comprehensive concept is shown at the top and then the least comprehensive gradually) The teacher wants to achieve the desired goals through the use of mental maps, using shapes, colours, and vocabulary that are easy and clear to the learner and put them in the learner’s environment and the role of mental maps used in the educational units through which the required goals set by the teacher were achieved in proportion to the level of individuals and the research sample in order to be Determining the correct learning path and its implementation, and thus in the skill exercises for volleyball, as it is necessary to overcome boredom and provoke the learners’ motivation, which leads to the completion of the motor duties required of the learners in the correct manner (do Amaral Machado et al., 2021).

Table 4. The mathematical means, common deviations, and the calculated value of T between the pre and post-tests for the control group in the studied variables.

Variables	Pre-test		Post-test		S/F	AF	Value of T	Sig.	Statistical significance
	S/	A	S/	A					
Numbers	1.98	0.276	4.43	1.387	2.54	1.721	6.498	.001	Substantial
Transmitter receiver	2.54	0.687	3.98	1.654	1.43	1.354	4.801	.003	Substantial

Note. *Substantial if sig. \leq .05.

Table 4 shows that the mathematical mean of the pre-test for the preparation skill for the experimental group was (1.98) with a standard deviation (0.276), and the mathematical mean in the post-test was (4.43) with a common deviation (1.387). The preparation skill reached (6.498) with an error level of (.001) which is less than .05. This means that there are significant differences between the pre and post-test for the two experimental groups and in favour of the post-test, and that the arithmetic mean of the tribal test of transmitter

reception skill for the experimental group amounted to (2.54) with a standard deviation of (0.687). The mathematical mean in the post-test was (3.98) with a standard deviation of (1.654), as it shows that the t-value calculated for the significance of the differences between the pre and post-tests of the skill of preparation amounted to (4.801) with an error level (.003) which is less than .05, meaning that there are significant differences between the pre- and post-test for the two experimental groups and in favour of the post-test.

Table 5. The arithmetic means, standard deviations, and the calculated t-value between the pre- and post-test for the experimental and control groups in the post-test of the variables investigated.

Variables	Pre-test		Post-test		S/F	AF	Value of T	Sig.	Statistical significance
	S/	A	S/	A					
Numbers	1.98	0.276	4.43	1.387	2.54	1.721	6.498	.001	Substantial
Transmitter receiver	2.54	0.687	3.98	1.654	1.43	1.354	4.801	.003	Substantial

Note. *Substantial if sig. \leq .05.

Table 5 shows that the arithmetic mean of the pre-test for the preparation skill for the experimental group amounted to (6.65) with a standard deviation of (1.954), and the arithmetic mean in the post-test was (4.43) with a standard deviation of (1.387). The preparation skill amounted to (4.121) with an error level of (.003) which is less than .05. This means that we can find significant differences between both the pre and the post-tests for the two experimental groups in favour of the post-test, and that the mathematical mean of the pre-test of the transmitter reception skill for the experimental group was (7.98) with a standard deviation of (1.887). The arithmetic mean in the post-test reached (3.98) with a standard deviation of (1.654), as it shows that the t-value calculated for the significance of differences between both the pre and the post-test of the skill of preparation amounted to (6.887) with an error level (.001) which is less than .05 meaning that there are significant differences between The pre and post-test for the two experimental groups and in favour of the post-test.

The researcher attributes this to the application of the five-year learning cycle's educational units strategy, which had a significant impact on making the learning process more effective through the stages of the strategy steps included in the educational units, which include (excitement - exploration - interpretation expansion - evaluation) and this is consistent with what he mentioned de Arruda "On the clarity of the learning steps in the five-stage learning cycle as well as the nature of the presentation of the material in a manner that suits the needs of learners through linking the theoretical and practical side, which leaves a clear and effective impact on the development of inferential thinking among students, as it helps them to increase their cognitive potential so that It will be easier for them to do mental operations and apply them in practice" (de Arruda, 2021).

Mental maps because they help the learners to rely on themselves by referring to the map, so the learners have the ability to correct the information after listening to the teacher's explanation and displaying the skill. They are able to try to develop the educational process, unlike the control group, which did not reach an effective level of developing the educational process. Mental maps that develop hierarchical thinking. and helping the learner to assimilate the content and understand its cognitive structure through organization and classification, as well as identifying the main ideas of the lesson concept, organizing information and its special details, and that the effectiveness of using mental maps, which included clarification, suspense, excitement, and increasing thinking among learners through presentation and explanation to the teacher through mental maps (Jariono et al., 2022). In correcting the previous information and linking it with the new

information, where the learner performs the self-evaluation process to find out what the wrong performance is and correct it and enhance the correct performance by referring to the mental maps hanging in front of him that the teacher prepares in advance whereas Abdel Wahab stressed that mental maps (used to identify the main and sub-ideas supporting them, and the details of these ideas, and are also used for division, classification and grouping in the form of categories or groups, where the main idea is written at the top of the line, and the sub-ideas are written below, and the bottom of the classification branches are written Specific details for each branch, and multiple subsections can be made (Bieleke et al., 2019; Rocha et al., 2020).

This is in contrast to the method used by the subject teacher when teaching the control group in which he was only interested in the educational material, i.e. how to perform skills, the role of the teacher is an important and basic role, and the role of the learner only receives ready-made information from the teacher, which leads to memorial learning, which makes the researcher find through the use of a course strategy Five-year learning that correct information is built through the performance of the learners themselves and feedback so that the learning becomes meaningful. Learning according to this philosophy is a continuous, active, and purposeful process of construction that requires mental effort and the individual builds his knowledge by himself, and learning occurs where the ideas in the learner's possession are modified or add latest information.

CONCLUSIONS

- 1- There is a positive effect of using the five-cycle learning strategy in learning the skills of preparing and receiving volleyball for students.
- 2- There was an effect of the educational units that were developed for the stages of the five-year learning cycle strategy for the skills of preparation and reception in volleyball.
- 3- The results showed that there were significant differences for the experimental group in learning the preparation and reception skills in volleyball.

AUTHORS CONTRIBUTIONS

A.K.A., and Z.H.A. designed the study. A.K.A. collected the data. A.K.A., and Z.H.A. performed the study and analysed the results. Z.H.A. helped translate the study.

SUPPORTING AGENCIES

No funding agencies were reported by the authors.

DISCLOSURE STATEMENT

No potential conflict of interest were reported by the authors.

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