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(The effect of the Barman model according to the cognitive style (superficial and deep) in teaching some basic skills in volleyball to students)

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ABSTRACT

The importance of the current study lies in the use of a modern teaching model that keeps pace with the progress and development of the times, which is the model (Barman), which represents one of the models of constructivist theory that makes the student the focus and part of the educational process and a participant in it, and the use of this model came as an attempt to raise the level of students in the performance of skills sending, receiving and preparing volleyball, and the study aimed to identify the impact of the model (Barman)) by means of assistance in the skill performance of some basic skills in volleyball for students, and the researcher has assumed that there is a positive impact of the model (Barman) by means of assistance in the performance of skill sending, reception and preparation of volleyball for students.

The researcher used the experimental approach by designing the two equivalent groups (experimental and control), and the research community was represented by second-year students in the College of Physical Education and Sports Sciences, University of Dhi Qar for the academic year (2021-2022), as for the research sample, it amounted to (40) students, as they were randomly selected and were divided into two groups and by (20) students in each group, as the experimental group was taught with the (Barman) model by auxiliary means, and the control group was taught according to the teaching mechanism followed by the teacher in skill performance

1- Definition of research

1.1 Introduction and importance of research

Nations and peoples rise and their historical role in building human civilization is growing by the extent of their interest in science and the level reached by their members as the basis of human progress, and the teaching of physical education has received increasing attention and scientific projects have emerged to develop sports sciences, as confirmed by researchers through their study and research on the importance of choosing an educational model, and Susan S. Ellis (Susan S. Ellis)) "Education models are models based on the theories of educators, psychologists, philosophers and others, who investigate how an individual learns. The model contains principles or foundations, a series of steps (actions and behavior) that should be performed by the teacher and the student, in addition to a description of the necessary support systems, and methods for evaluating the learner's development."[(1)]

There are many teaching models, some of which are general and applicable in teaching various educational subjects, and some of which are specific and have been developed to teach specific educational subjects. An example of a general model is the Barman model for learning concepts. The game of volleyball has received a lot of this development in recent years in all aspects, especially the two aspects of performance (skill - cognitive), where one is closely related to the other and cannot be separated.

1.2 Research problem:

Despite the development in the field of teaching methods, the process of learning and teaching, especially at the undergraduate level, needs continuous development through the use of modern teaching strategies, methods and models that keep pace with scientific and technical development in order to achieve educational goals, and contribute to raising the level of achievement and developing thinking skills, which is the goal of modern education.

Through the observation of the researcher being a student in the Faculty of Physical Education and Sports Sciences, as well as a teacher on the staff of the Ministry of Education, he noted that the results of learning the skill performance of students in volleyball does not achieve appropriate results that correspond to the level and ambition that both the student and the teacher aspire to, and the researcher

[1] Yousef Faleh Al-Saadi: **The effect of using the models of Daniel and Closmeyer in acquiring the concepts of biology and the attitude towards the subject among middle school students**, unpublished doctoral thesis, College of Basic Education, Al-Mustansiriya University, 2007.

attributes the reason for those results to the lack of consideration of individual differences between learners due to the different level of students' perception of concepts during learning and the non-use of some teachers cognitive methods and restricted to following some certain methods without Other, and not classifying students according to their fields of knowledge.

1-3 Research Objectives:

1. Preparing and codifying the cognitive method test (superficial - deep) for the research sample.
2. Preparing educational units according to the Barman model according to the cognitive style (superficial - deep) in creative thinking and learning some basic skills in volleyball for students.
3. Identify the effect of the Barman model and the method used for those with cognitive style (superficial - deep) in creative thinking between the pre- and post-tests of the experimental groups and the two control groups.

1 – 4 research hypotheses:

1-The Barman model and the method used have a positive impact on learning some basic skills in volleyball for students.

2-The existence of statistically significant differences between the post-tests of students using the Barman model to learn some basic skills in volleyball for students and in favor of the Barman model.

1-5 Research Areas:

1-5-1 Human field: Fourth grade students / Muhammad Baqir Al-Hakim Preparatory School / affiliated with the Nasiriyah Education Department for the academic year (2023-2024).

1.5.2 Time Domain: Period from 17/1/2024 to 20/4/2024 .

1-5-3 Spatial field: Volleyball court (closed hall) in Mohammed Baqir Al-Hakim High School / affiliated to the Department of Education Nasiriyah .

1-6 Definition of terms:

Barman model: Barman (1992: 22) defined it as "one of the modern teaching models that emphasize the positive interaction between the teacher and the learner and proceed according to four stages (the stage of identification or guessing, the stage of investigation, the stage of dialogue, the stage of application)."

3- Research Methodology and Field Procedures

3-1: Research Methodology

The researcher used the experimental approach in the style of designing equivalent groups with pre- and post-test for its suitability to the nature of the problem to be solved, the experimental approach has some real tangible results on the impact of educational methods and that (what distinguishes the accurate scientific activity is the use of the experiment method).[2]

Van Daalen also points out that "experimentation is the deliberate and controlled change of the specific conditions of an event and the observation and interpretation of the resulting changes in the event itself, as it is possible through the experimental method to predict the event and control its study." [3]

3-2: Research population and sample

The research community included the fourth preparatory students (A - B - C - D - F) in Muhammad Baqir Al-Hakim High School for the academic year 2023-2024 AD, numbering (245) students, that the nature of the goals set by the researcher for his research and the procedures he uses are

The researcher will define as follows

The first experimental group: The number of members of this group (20) students from the division (A) and this experimental group works according to the Barman model.

The second control group **:** The number of members of this group (20) students from the division (B) and this control group works according to the style of the teacher followed.

3-3: Tools and means of collecting research data

3.3.1 Means of data collection

In order to obtain data and information for the purpose of completing field research procedures, the following means have been used:

1) Arab and foreign sources and references.
2) International Information Network (Internet).
3) Personal interviews with experts and specialists attaché.

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[1]) Wajih Mahjoub: **Methods and Methods of Scientific Research**, Baghdad, Dar Al-Hikma Printing, 1993, p. 246.

[2]) Van Dalen Dieu Paulus: **Research Methods in Education and Psychology**, translated by Amad Shibl Nofal and others, Cairo, Arab Record Press, 1977, p. 311.

4) Skill tests.
5) Metrics used in **the supplemental search.**

3.3.2 Devices and tools used

The researcher will use the following tools and devices:

- Legal volleyball court.
- Legal volleyballs (10).
- Adhesive tape .
- Chair and nightstand.
- Whistle .
- Manual scientific calculator.
- Flex .
- Metric tape measure to measure lengths.
- Lap Top (HP) device (1).
- Medical scale to measure weight.
- Japanese-made Diamond-type stopwatch, number (1).
- Japanese-made SONY video camera with a frequency capacity of 25 images/s (2).
- Data Show show.
- Korean-made (Printo) CDs.
- Camera Stand

3-4 - tests for the most important basic skills in volleyball: -

3.4.1Test the technical performance of the skill of transmission from the top of volleyball:

Objective of the test:

Evaluating the technical performance of the transmission skill through the three sections of the skill (preparatory, president, and final).

Used Tools:

Legal volleyball court, 3 legal volleyballs, and a pre-prepared performance evaluation form.

Performance method: The tested student performs the skill of sending from above, from a standing position, and for three consecutive attempts

Registration: Three assessors () *evaluate the three attempts for each student tested, and give her three grades for each assessor, knowing that the final evaluation score for each attempt

(10) degrees divided into the three skill sections, which are (3) for the preparatory section, (5) degrees for the main section, and (2) degrees for the final section, and then the best degree is chosen for each constituent, by extracting the arithmetic mean for the best three degrees, the final score is extracted for each laboratory player.

3.4.2Test the level of skill performance to receive transmission from below in volleyball

The objective of the test **(Al-Dulaimi, 2002, p. 48).**

Evaluating the level of skill performance to receive transmissions through the three sections of the skill

(Preparatory, President, Final) by experts.

Tools used

Legal volleyball court, legal volleyballs number (21), and a pre-prepared performance evaluation form.

Performance method: The student tester performs the skill of receiving the transmission, from a standing position, and for three consecutive attempts, as shown in Figure (8).

Sign up

The three evaluators evaluate the three attempts for each laboratory student, and three degrees are granted for each constituent, noting that the final evaluation degree for each attempt (10) degrees divided into the three skill sections, which are (3) for the preparatory section, and (4) degrees for the main section, and (3) degrees for the final section, and then the best degree is chosen for each constituent, and by extracting the arithmetic mean for the best three degrees, the final grade is extracted for each laboratory student.

3.4.3 Test technical performance (technique) skill preparation.

☒ Objective of the test: Evaluating the technical performance of the preparation skill through the three sections of the skill (preparatory - main, final)

Tools used: legal volleyball court, volleyballs (3) and a pre-prepared evaluation form.

Method of performance: The student tester performs the preparation skill in the area specified for preparation, i.e. from the center (3) trying to perform the preparation skill correctly and for three attempts, provided that it does not touch the ball, the player's body and the net, or cross the opponent's field as shown in Figure (9)

Registration: The three evaluators (") evaluate the three attempts for each laboratory student, and give him three degrees for each constituent, knowing that the final evaluation score for each attempt (10) degrees divided into the three skill sections, which are (3) degrees for the preparatory section, (5) degrees for the main section, and (2) degrees for the final section, and then the best degree is chosen for each constituent and by extracting the best arithmetic mean three degrees, the final grade is extracted for each laboratory student.

3.5 Exploratory Experience:

The exploratory experiment is a practical training for the researcher to stand by himself on the negatives and positives that meet him during the test to avoid them, and the researcher conducted the exploratory experiment on a sample other than the research sample and from the community of origin and their number (10) students, and the researcher and the school of article (*[4]) supervised the experiment, to identify the obstacles to the field experience, the most important of which are:

1- Work obstacles and the ability of the subject school assigned to understand and implement the required strategy.

2- Strategy requirements and timings of educational units

3- The validity of communication devices and ensure the installation and work of the social networking program (Telegram) used by students in the implementation of the flipped learning strategy.

4- The validity of the devices and tools used and the needs of other supplies.

5- Introducing the assistant work team to their duties.

6- The time spent in implementing the skills to take this into account in the experience.

3.6 Pre-tests

The tests "are the means of evaluation, measurement, diagnosis and guidance in the curriculum, programs and various plans for all levels and age stages, they play an influential role and clearly indicate the extent of progress and success in achieving the goals set" (2).

Before starting the tests, the researcher gave two introductory units in the teacher's style used to explain the technical performance of the sending and receiving skills of the control and experimental groups in order to enable students to identify the skill performance, its stages and how to perform it, then the pre-test was conducted on the research sample for the control and experimental groups on Monday, 23/3/2021 AD at ten thirty in the morning on the volleyball field (closed hall) at the Faculty of Physical Education and Sports Sciences - University of Thi-Qar and in the presence of the subject teacher And the assistant work team under the direct supervision of the researcher.

Table 1

Shows the equivalence of the two research groups in the tests of cognitive achievement and learning the technical performance of the skills of sending, receiving and preparing volleyball

Indication Type	Sig	Calculated t-value	Experimental Group		Control group		Variables
			± on	Going to	± on	Going to	
Immoral	0.489	0.699	2.906	17.150	1.984	16.600	Transmitter skill

Immoral	0.353	0.940	0.648	3.000	0.695	2.800	Reception
Immoral	0.431	0.503	0,432	2.666	0.543	2.555	Setup

*** D at ≤ level (0.05)**

3.7Main experience

3.7.1 Formulation and implementation of educational units according to the Barman model

The researcher will see a lot of sources, studies and scientific references and depending on personal interviews and the experience of the researcher and benefit from the results of the exploratory experiment that he will conduct on an educational unit as well as access to some studies and research, the researcher has developed the educational units for the strategy of the Barman model for the experimental group and included (four stages) and in a way that suits the subject and sample of the research and distributed on

(9) educational unit The researcher will benefit a lot from the experience of the supervisor and his opinions and observations in addition to personal interviews with the experts who will provide many observations on the formulation of educational units and the researcher will take these observations and adjustments to suit the nature of the current study.

Where the curriculum is the experimental group:

The model, as mentioned earlier, consists of four organized, sequential and interrelated stages, where each stage includes a set of procedures and steps taken by the teacher or student to achieve the goal of each stage of the model, which are as follows:

- ☒ **Preparatory section: (15) minutes will include introduction, general warm-up and special warm-up**
- ☒ **Main section: (70) minutes**
- ☒ **Educational Side Part (15)**

First: the stage of determination or guessing:(15 minutes)

At this stage, the following procedures and steps were implemented:

1- Determine the skill or new subject of the educational unit.

2- The teacher begins to retrieve previous information and experiences with students about the new skill or subject.

3- Raising questions by the teacher about the skill or topic.
4- The teacher gives information and general steps on how to perform the skill or tactic of the overwhelming beating correctly, stressing the most important conditions and specifications of this correct performance.
5- The teacher explains and displays the current skill or topic and the correct form of performance through the educational poster and display screen.
6- Then the teacher presents the skill using the model, emphasizing the most common mistakes during performance to avoid them in the future.
7- Determine the tasks, duties and exercises that will be given in the next stage.

The objective of this stage is:

1- The teacher learns through it the highest experiences and previous information that the student holds about the skill or the new subject because it is therefore reflected in the level of performance.
1- Attract students' attention and focus and spark constant reflection, interpretation and analysis about the current topic.

☒The practical part (55) minutes includes

First: Investigation phase :(20 minutes)

The following procedures and steps are implemented:

1- Students are divided into groups in order to apply the skill they saw in the previous stage.
2- The teacher encourages students to work collectively in order to reach the best performance.
3- The teacher observes the performance, listens to the students and records his observations about the level they have reached in performance.
4- Giving students the freedom to choose their movements to reach the best performance according to their understanding that they have reached.
5- Provide feedback and correct errors.

The objective of this phase is to:

1- The teacher knows the real level of students through performance.
2- Making the student self-reliant in overcoming the problem facing him through investigation, search for solutions and conclusion.

Second: Dialogue Phase: (5 minutes)

The following procedures and steps are implemented:

1- The teacher gathers the students again in front of the educational poster or the display screen to be a dialogue session between him and the students.
2- Proposing, clarifying and discussing the problems faced by students during the application of performance in the previous stage.
3- Explain the concepts and ideas reached by the students during their application of performance in the previous stage.

4- Re-display the skill or topic again in all its details through the educational poster or display screen through which educational films for the skill or subject are displayed so that the student can compare his performance with the ideal performance to reach the correct understanding of performance.

5- The teacher develops appropriate explanations to solve the problems and mistakes that students made during performance.

The objective of this phase is to:

1- Increasing the student's self-confidence by discussing the most important problems he faced during the performance in the previous stage.

2- Through the process of dialogue between students and the teacher, mutual trust between the students themselves on the one hand and the teacher on the other hand will increase and encourage joint teamwork to reach solutions.

Third: Application Phase: (30 minutes)

The following procedures and steps are implemented:

1- Students are divided into groups in order to reapply the skill that was explained in the previous stages.

2- Students reapply the motor duties they reached in the previous stages.

3- The teacher encourages students to apply new concepts and skills.

4- The teacher directs students towards solutions indirectly and helps them organize their ideas.

5- The teacher directs students to benefit from previous experiences and link them to current experiences to carry out tasks.

6- The teacher corrects errors by giving feedback to students during performance.

The objectives of this stage are as follows:

1- Apply all the tasks and skills reached by students in the previous stages and more freely.

2- Give feedback to correct errors and evaluate performance.

3- Observing the development and improvement in performance.

4- At the end of each educational unit, the teacher gives way to asking questions, and then exercises to calm and relax and give duty to students about the subject of the next unit and then leave.

☒**Concluding part** :(5) minutes Give some recreational exercises End lesson

3.8 Post-tests

The researcher will apply the post-tests, which will be determined later, with an emphasis on providing and creating the conditions in which the pre-tests were conducted as much as possible in terms of the time and place of the pre-tests, their location, the devices used and the safety devices.

3.9 Statistical methods

The researcher used the statistical bag SPSS in order to process statistical data, tenth edition.

1) Percentage
2) Arithmetic mean
3) Standard deviation
4) Torsion coefficient
5)Chi-square (Ka2) T test for equal samples
6) Pearson's simple correlation coefficient

4- Presentation, analysis and discussion of results:

This chapter includes the presentation of the results of the tests used in the research and that the research sample (experimental and control groups) underwent in the pre- and post-tests according to tables to find out the differences and compare the results of statistical operations to reach the final results and discuss these results.

4-1 Present, analyze and discuss the results of the pre- and post-tests of the experimental and control groups.

For the purpose of achieving the objective of the study (second), which includes identifying the impact of the model (Barman) by means of assistance in the skill and tactical performance of the overwhelming beating of volleyball for students, so the researcher resorted to appropriate statistical treatments to identify the extent to which this goal was achieved as follows:

4.1.1 Presentation, analysis and discussion of the results of the differences between the pre- and post-tests of the experimental group in the variables studied:

Table 2

Shows the arithmetic means, standard deviations and value (t) calculated between the pre- and post-tests of the skill performance of some basic skills of the experimental group

Indication Type	Calculated value (t)	p f	P -	Dimension		Tribal		Unit of measurement	auditions
				on	Going to-	on	Going to-		
Moral	17.859	0.211	3.766 -	0.672	7.556	0.389	3.790	degree	Technical performance transmitter
Moral	14.826	0.683	10.125-	2.346	28.125	1.168	18.000	degree	Technical Performance Reception
Moral	17.662	0.730	12.888-	1.460	35.972	1.379	23.083	degree	Performance Preparation
Tabular value (t) of (2.201) and degree of freedom (11).									

The results of Table (9) show differences and discrepancies in the values of the arithmetic means and standard deviations of the variables under research among

the students of the experimental group in the pre- and post-measurements, as the value of the arithmetic mean and standard deviation of the test (technical performance transmitter) in the pre-measurement (3.790) and (0.389) respectively, while the value of the arithmetic mean and standard deviation in the post-measurement amounted to (7.556) and (0.672), and when inferring the significance of the difference between the two arithmetic mean through the use of the test (t) for correlated samples, it appeared that the value of (t) calculated amounted to (17.859), which is greater than its tabular value of (2.201) and the degree of freedom (11), and this indicates the significance of the differences between the pre- and post-measurements and in favor of the post-measurement in the technical performance test transmitter.

While the value of the arithmetic mean and standard deviation of the test (reception) in the pre-measurement (18.000) and (1.168) respectively, while the value of the arithmetic mean and standard deviation of the dimensional measurement was (28.125) and (2.346), and when inferring the significance of the differences between the two arithmetic means, the results of the calculated value (t) and the adult (14.826), which is greater than its tabular value of (2.201) and the degree of freedom (11) This indicates the significance of the differences between the pre- and post-measurements and in favor of the post-measurement in the reception test.

While the value of the arithmetic mean and standard deviation of the test (performance numbers) in the pre-measurement (23.083) and (1.379) respectively, while the value of the arithmetic mean and standard deviation of the dimensional measurement was (35.972) and (1.460), and when inferring the significance of the differences between the two arithmetic means, the results showed the value of (t) calculated and adult (17.662), which is greater than its tabular value of (2.201).) and the degree of freedom (11) and this indicates the significance of the differences between the pre- and post-measurements and in favor of the post-measurement in the performance test preparation

The results have shown through Table (9) that there are significant differences between the results of the pre- and post-test and in favor of the post-test of the experimental group in the variables studied (technical performance test transmitter, reception, and performance test preparation), and the researcher attributes these significant differences to the positive impact of the model (Barman) by means of assistance prepared by the researcher for the experimental group; The four (identification or guessing, investigation, dialogue, application) as each of these stages included a set of procedures and steps carried out by the student or teacher to achieve its own goals, and teaching according to this model helped them to link between the main and sub-topics, which makes the student's education continuously and organized according to the four steps of the model and this is confirmed by each of (Al-Afoun and

Makoun, 2012: 87) "In that the models of constructivist education is based on the important principle is the design of strategies and teaching and educational practices focused on the learner and diagnose the student's previous experiences and link them to the new learning to build the required knowledge", as this model contributed to taking students out of the traditional pattern followed.

5- Conclusions and recommendations:

5.1 Conclusions:

By presenting, analyzing and discussing the results in the fourth chapter, the researcher reached the following conclusions:

1- The students of the experimental group that used the model (Barman) with auxiliary means and clearly outperformed the students of the control group that adopted the teaching mechanism followed by the subject teacher.

2- The diversification of the aids used in the educational units according to the model (Barman) had a great impact on raising the level of students of the experimental group and their superiority over the students of the control group.

5.2 Recommendations:

Based on the conclusions shown by the current study, the researcher concluded the following recommendations:

1- Benefiting from the test designed by the researcher in the future in new research and studies in the game of volleyball.

2- The need to introduce various aids in the educational units of volleyball in order to watch the parts of the movement in detail, as well as its importance in linking the senses of hearing with sight, which in turn leads to speeding up the learning of motor skills.

3- Conducting similar studies using the model (Barman) by means of assistance on other samples and other games because of its good features and characteristics in the educational process.

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