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The effectiveness of the numbered heads strategy in learning the skills of handling from top and bottom in volleyball for students

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Abstract---The study is summarized in preparing an educational curriculum according to the numbered heads strategy in learning the skill of handling from the top in volleyball for students as one of the modern strategies that actively contribute to encouraging active learning among learners and achieve satisfactory educational results for the teacher, both at the level of learners' achievement or on the smoothness of its steps and the reflection of its results on The level of the teacher's performance in the lesson, and the research sample was determined from the fifth stage students at Al-Wathba Model School for Boys in Misan Governorate for the academic year 2021-2022, and they numbered (68) students, and (6 students) were selected for the exploratory sample and (24 students) were chosen. The researchers used the experimental method with two equal groups, and through the results of the research, they concluded that the experimental group outperformed the control group because of the effectiveness of applying the numbered heads strategy in the group's educational units. The researchers recommended the necessity of applying this strategy for this age group of students, as well as applying it to the rest of the skills the basics of volleyball and other games.

Keywords---numbered heads strategy, top and bottom handling skills, volleyball.

Introduction

Introduction and importance of the research

Education in general in the field of physical education and sports sciences needs to use strategies that simulate the level of learners and the type of material presented that are compatible with the environment, given that learning theories and modern teaching methods need scientific rules and basics for the purpose of acquiring mathematical knowledge and skills. Thus, it can be said that working according to active strategies has become Necessary for the purpose of learning better, and thus the Numbered Heads Together strategy is one of the modern teaching strategies that have a role in achieving satisfactory educational results for the teacher, whether at the level of learners' achievement or on the flow of its steps and the reflection of its results on the level of the teacher's performance in the lesson. This educational strategy is based largely on dividing the learners in the form of groups equal in the number of their members, and these groups carry similar numbers, as well as the members of these groups are also carrying similar numbers, that is, they are repeated on all groups, and the members of the group put their heads together to make sure that the answer to the question posed is correct. From the teacher, the holders of the relevant number provide the answer to the class as a whole. Thus, it can be defined as a strategy based on numbering learners with numbers unknown to the teacher, a procedure that makes each student vulnerable to participating in the course of the lesson and answering the questions that are asked when a number is chosen because it includes more than one student due to the repetition of each number on the number of totals in the class and attracting their attention to the activities suggested by the teacher. Strategies are of great importance as they are "a series of changes that occur during an acquired experience to modify human behavior, which is the process of adapting responses to suit different situations that express his experiences and suit him with the environment. The process of planning his teaching activities at the level of goals, implementation and evaluation (1) and active strategies based on the theories of educators, psychologists, philosophers and others who are looking at how an individual learns is a series of steps (actions and behavior) that should be carried out by the teacher and the learner, in addition to a description of the systems Necessary support (2) (Saeed Ghani et al. 2019) emphasized that "the mind does not learn in a passive way through recording and memorizing information, but rather needs active attempts to make what the individual learns of information meaningful to him" (3)

One of the team games practiced by fifth graders in Iraqi schools is volleyball, which is of great importance in enhancing the fun and pleasure aspect of the students, in addition to its importance in developing their physical and kinetic aspects. Hence the importance of this strategy in enhancing the attention and readiness of the learners and eliminating the dependency that the learners adopt in the usual teaching methods, in addition to that it develops the sense of individual responsibility among the learners as well as accustoming them to social responsibility and develops the learner's confidence in himself to contribute to learning and gaining technical performance of my handling skills Top and bottom volleyball.

Research Problem

Through the researchers' follow-up to some scientific sources in the field of specialization in learning theories, in addition to their field knowledge in the field of teaching physical education and sports sciences in general and teaching volleyball in particular, they noticed that there is a lack of interest in the use of active educational strategies by physical education teachers in public schools. Misan governorate, in addition to the presence of a clear weakness when students perform the handling skill of all kinds, given that this group and team game is one of the games that contribute significantly to the involvement of students in improving their physical, motor and skill level, and because of the importance of the skills of handling from the top and bottom of this game in schools, given that mastering it can The team retains the ball, achieves goals and influences the opponent by preparing to attack the opponent. Thus, the researchers decided to conduct such a study according to the numbered heads strategy in learning the skills of handling from top and bottom in volleyball for students to Al Wathba Model School for Boys in Misan Governorate for the 2021-2022 school years.

Research Objectives

1. Preparing an educational curriculum according to the numbered heads strategy in learning the skills of handling from top and bottom in volleyball for students.
2. Identifying the effectiveness of this approach in relation to the traditional approach .

Research hypotheses

1. There are significant differences between the pre and post-tests in favor of the post-tests (for the experimental and control groups)
2. There are statistically significant differences between the two research groups in the post test and in favor of the group that practices the numbered heads strategy.

Research Areas

1. The human field:- Fifth grade students of Al Wathba Model School for Boys in Misan Governorate for the academic year 2021-2022.
2. The time range: from 3/18/2022 to 04/20/2022.
3. The spatial domain: the special sports arena for volleyball in Al-Wathba Model Primary School for Benben in Misan Governorate.

Research methodology and field procedures

Research Methodology

The researchers used the experimental method in the manner of two equal groups to suit the nature of the problem to be solved, as the experimental method "represents the most honest approach to many practical problems in a practical and theoretical way" (1)

The research community and its sample

The researchers identified the research community from the fifth grade students of Al Wathba Model School for Boys for the academic year 2021-2022, and 68 students were identified as a research community. 12 students and another experimental group of 12 students, and the exploratory group numbered 6 students, as shown in the experimental design.

Experimental design for research

dimensional tests	independent variable		tribal exams	the group
Skill performance test	style	The equivalence of the research sample	Skill performance test	control
	Numbered Heads Strategy			Experimental

Equivalence of the two research groups

Before proceeding with the implementation of the prepared curriculum, the researchers conducted an equivalence of the technical performance of the two skills of handling from top and bottom in volleyball, as shown in Table (1)

Table (1) It shows the equivalence of the two groups in the pre-test of the technical performance of the upper and lower handling skills in volleyball

Indication type	error rate	Calculated T value	Experimental		control			the group Variables
			$\bar{x} \pm s$	s	$\bar{x} \pm s$	s	measuring unit	
insignificant	1.08	0.93	0.82	1.24	0.68	1.56	Degree	Handling from the top
insignificant	1,11	0.88	0.75	1.32	0.55	1.24	Degree	Handling from the bottom
) Significant at the error level *0.05) if the error level is less than (0.05 (= degree of freedom (22) . Note that the maximum performance score *10								

Table (1) showed the t-value calculated in the tribal tests of the technical performance of the upper and lower handling skills in volleyball for the two research groups. The results showed that the significance is not significant for two skills, which indicates the equality of the two research groups.

Means of collecting information, devices and tools used:

Means of collecting information:

- Arab and foreign scientific sources and references.
- world wide web.
- Personal interviews.

Tools used

- Legal volleyball court

- Metric tape measure
- Flying balls (8)
- Colorful adhesive tapes
- whistle number (3)
- Statistical means
- Arbitration Board

Equipment and tools used:

1. Personal laptop computer type (HP) Chinese.
2. Electronic stopwatch.

Evaluation of the technical performance of the skill:

The skill was tested according to the direct evaluation method by a specialized jury (□) for the purpose of evaluating the technical performance of the skills in question.

Field Research Procedures

Experimental Experiment

The exploratory experiment was conducted on (18/3/2022) on (6) students. They were selected from the original sample and then they were excluded. The purpose of conducting the exploratory experiment is to achieve the following objectives:

- Avoiding errors that are likely to occur.
- Identify the time spent in the implementation of the tests.
- Verify the validity of the devices and tools used.
- Verify the capabilities of the assistant work team on the nature of the experiment and how to implement it.

Tribal tests

The tribal tests were conducted on Sunday 20/3/2022, and before starting the tribal tests, one introductory unit was given to the two groups together a day before the curriculum was applied and the experimental group was introduced to how to perform the test with a detailed explanation of the research method.

Educational Curriculum

Experimental group approach

The educational units were applied according to the Numbered Heads Together strategy on the experimental group to teach the technical performance of the upper and lower handling skills in volleyball. One instructional (45) minutes according to the following division:

First: the preparatory section is a general and special warm-up (7 minutes)

Second: The main section (35 minutes)

The educational part

The implementation of this part took 15 minutes, according to the following steps: This part included the application of the basic stages according to the numbered heads strategy:

1. Divide the learners into four groups with different levels of education.

2. Each group is given a specific letter (A, B, C, D)
3. The number of learners for each group is 3 students.
4. Each student is given a number to be recorded with him and memorized instead of his name, while the group number is preserved by the student
5. The teacher directs his questions about the skill to be learned and then determines the number of the learner he wants to answer.
6. The teacher sets the group number and then allocates the concerned learner to the question, and so on.

Practical part

This part was implemented for a period of (20) minutes, according to the following steps:

1. In this part, the teacher applies the last paragraph of the strategy, which is to determine the group that got the highest points, and according to the competitive method, you apply the skill in a practical way, first with giving reinforcement feedback, and then the second group that got lower scores than the first, and so on for the rest of the groups the other.
2. Repeating the exercises for the skills of handling from the top and bottom on the wall with giving feedback from the students themselves between each group.
3. Repetition of the exercises related to the skills of handling from the top and the bottom among the students themselves, with giving feedback from the students themselves between each group and the teacher monitoring them and determining the best group to apply and give correct feedback.
4. Repeating the exercises related to the skill of handling from the top and bottom among the students themselves, giving feedback from the teacher and identifying the group that is more developed than others.

Closing section

(3) Minutes in which students are given the game of Reverse Signing and Leaving.

Control group approach

The educational units were applied according to the curriculum followed by the subject teacher and for the two skills under study for the same period and under the supervision of the researchers.

Post-tests of the research sample

The researchers conducted post-tests for the control and experimental groups on Wednesday 20/4/2022.

Statistical mean.

The (SPSS) program was used in processing and extracting the data for the research with some statistical means in processing the results to reach and impose the research objectives: (percentage ratio, arithmetic mean, standard deviation, T-Test)

Presentation, analysis and discussion of the results

Presenting and analyzing the results of the pre and post tests:

Table (2) Shows the value of (t) calculated for the upper and lower handling skills in volleyball for the control group

Indication type	mistake percentage	Calculated T value	post test		pretest			the group Variables
			$\bar{x} \pm s$	s	$\bar{x} \pm s$	s	measruing unit	
moral	0.000	2.23	1.81	2.89	0.68	1.56	Degree	Handling from the top
moral	0.000	3.18	1.15	3.61	0.55	1.24	Degree	Handling from the bottom

) Significant at the error level *0.05) if the error level is less than (0.05)
= Degree of freedom (11) . Note that the maximum performance score *10

Table (2) shows the arithmetic mean, standard deviation, and significance of differences for the control group for the tribal and remote tests of the skills of handling from the top and bottom in volleyball. In the tribal tests of the skill of handling from the top, it achieved an arithmetic mean of (1.56) and a standard deviation of (0.68), while it achieved in the test The dimensional mean was an arithmetic mean of (2.89), with a standard deviation of (1.81), and the calculated (t) value was (2.23) and the type of significance was significant with a percentage of error (0.000) at a level of error less than (0.05) and with a degree of freedom (11)As for the experimental group, in the tribal tests of the skill of handling from the bottom, it achieved an arithmetic mean of (1.24) and a standard deviation of (0.55), while in the post-test it achieved an arithmetic mean of (3.61), with a standard deviation of (1.15), and the calculated (t) value Its value was (3.18) and the type of significance was significant with an error rate of (0.000) at a level of error less than (0.05) and with a degree of freedom (11) and this is what achieved the first hypothesis.

Table (3) Shows the value of (t) calculated for the two skills of handling from top and bottom in volleyball for the experimental group

Indication type	error rate	Calculate dT value	post test		pretest			the group Variables
			$\bar{x} \pm s$	s	$\bar{x} \pm s$	s	measruing unit	
moral	0.000	3.20	1.21	4.88	0.82	1.24	Degree	Handling from the top
moral	0.000	5.10	1.45	6.11	0.75	1.32	Degree	Handling from the bottom

(Significant at the error level *0.05) if the error level is less than (0.05)
= Degree of freedom (11) . Note that the maximum performance score *10

Table (2) shows the arithmetic mean, standard deviation, and significance of differences for the experimental group for the tribal and remote tests of the skills of handling from the top and bottom in volleyball. In the tribal tests of the skill of

handling from the top, it achieved an arithmetic mean of (1.24) and a standard deviation of (0.82), while it achieved in the test The dimensional mean was an arithmetic mean of (4.88), with a standard deviation of (1.21), and the calculated (t) value was (3.20) and the type of significance was significant with a percentage of error (0.000) at an error level less than (0.05) and with a degree of freedom (11) As for the experimental group, in the tribal tests of the skill of handling from the bottom, it achieved an arithmetic mean of (1.32) and a standard deviation of (0.75), while in the post-test it achieved an arithmetic mean of (6.11), with a standard deviation of (1.45), and the calculated (t) value Its value was (5.10) and the type of significance was significant with an error rate of (0.000) at a level of error less than (0.05) and with a degree of freedom (11) and this is what achieved the first hypothesis.

Table (4) It shows the (t) value of the skills under study for the post-tests of the control and experimental groups

Indication type	mistake percentage	Calculate dT value	experimental group		control group			the group Variables
			$\bar{x} \pm s$	s	$\bar{x} \pm s$	s	measuring unit	
moral	0.000	2.39	1.21	4.88	1.81	2.89	Degree	Handling from the top
moral	0.000	3.44	1.45	6.11	1.15	3.61	Degree	Handling from the bottom
(Significant at the error level *0.05) if the error level is less than (0.05) (The degree of freedom22 = Note that the maximum score .(10)								

In Table (4) the results of the post tests between the control and experimental groups for the upper and lower handling skills in volleyball showed the calculated T-test value. (3.44) at an error level (0.000) and a degree of freedom (22), which indicates the significant differences between the control and experimental groups and in favor of the experimental group for the two skills, and this is what achieved the second goal of the researchers' hypothesis.

Discussing the Results

In the presentation and analysis of the results of the research in tables (2) (3) for the tribal and remote tests, it was found that there is a clear improvement in the acquisition of technical performance for the two skills under discussion in the post tests, and the researchers point out that the reason for this is due to the application of the approach prepared by the researchers for the numbered heads strategy. Numbered Heads Together and its effect on the speed of learning and mastery of the upper and lower handling skills in volleyball. As for the slight improvement in the control group, the researchers instruct the students to adhere to the curriculum prepared by the teacher, and this proved the first hypothesis. Through the application of the (t) test and the significance of the differences, we also note that there is a noticeable superiority of the experimental group over the control group through arithmetic circles when noting Table (4), in which the results of the post-tests between the two groups were presented, and it was in favor of the experimental group that applied the Numbered Heads Together

strategy, and this Which agrees with the second hypothesis. The researchers attribute that the reason for this superiority of the experimental group over the control group in the post-tests that practiced the Numbered Heads Together strategy is the application of the effective and scientific correct steps of the educational curriculum prepared by the researchers, in addition to the students' commitment to implementing the strategy, which contributed to the development of their performance level. Studies confirm that the use of effective learning "makes learners participate in the educational process in an effective way that goes beyond being recipients only, but rather their role goes beyond to using higher-order thinking strategies such as problem solving, analysis, synthesis and evaluation" (2). Thus, active learning according to the use of an effective strategy that is appropriate to the level of the sample "is a method of teaching and learning at the same time, in which learners participate in a variety of activities and with great effectiveness, through a diverse and rich learning environment that allows them to positively listen, rich discussion, conscious thinking, sound analysis, and reflection. With the teacher who encourages them to educate themselves on their own under his strict supervision, which pushes them towards achieving the desired learning goals" (2) and when using the Numbered Heads Together strategy, which effectively contributed to encouraging active learning among learners and which achieved satisfactory educational results for the teacher, both at the level of achievement The learners or on the flow of their steps and the reflection of their results on the level of the teacher's performance in the lesson, which is this type of education that is based on the cognitive theory and the constructivist approach to teaching in which learning takes place through three main steps in which the use of knowledge and explanation of the skill is the main focus of these steps (2). This type of learning contributes to building an external link between the learner's information on the one hand and the external information acquired on the other hand." (3) Achieving and acquiring the maximum degree of competence in educational situations is due to the effective educational curriculum as it is an educational method for organizing the study material on the basis of gradual steps , so that the learner can easily acquire it" (4)

Conclusions and recommendations

Conclusions

The researchers reached the following conclusions:

1. The experimental group outperformed the control group because of the effectiveness of applying the steps of the Numbered Heads Together strategy in the educational units of the experimental group.
2. The educational units prepared according to the Numbered Heads Together strategy has a positive effect in learning the two skills of handling from top and bottom in volleyball.
3. The use of the Numbered Heads Together strategy contributed to the positive interaction and the learners' contribution to the experimental group's feedback.

Recommendations

According to the foregoing conclusions, the researchers recommend the following:

1. The Numbered Heads Together strategy can be used to teach basic skills to other skills in volleyball.
2. Directing those in charge of the educational process in the province of Misan to use such strategies in learning and teaching as it develops the learner's self-confidence.
3. Conducting studies and research according to the Numbered Heads Together strategy on other games.

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