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The Effect Of Using The Jigsaw Strategy On Students' Learning Of The Forward Roll And Handstand Skills In Artistic Gymnastics

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Abstract: One of the most critical demands of the educational process is to focus on students and ensure they play an active role in the learning process, developing creative minds capable of solving problems and making more informed decisions. This can all be achieved through the application of modern educational strategies, as those responsible for the educational process constantly strive to develop teaching methods and work to increase positive interaction between teacher and student. Therefore, the Jigsaw strategy is a broader, more proactive response implemented to ensure the continuity of education, enabling it to achieve its original goals. This emphasizes team collaboration, allowing it to be further developed and enhancing the skills they possess so that they can learn from one another. Therefore, it is one of the most widespread and vital cooperative learning strategies in helping students participate in classroom activities, reducing teacher control over classroom instruction, and creating a learner-centered learning environment. Gymnastics is a challenging skill-based game due to its unique nature, as each skill has a different learning and movement path. The requirements for learning a skill prompt the learner to consider how to utilize their mind effectively and think critically to acquire a new skill. Relying on methods that do not take into account creativity and problem-solving results in a level of learning that falls short of the desired level.

Keywords: Jigsaw strategy, Front roll, and handstand

skills in artistic gymnastics.

INTRODUCTION: The process of learning a skill is currently the fundamental foundation upon which the level of athletic performance is built. Proper skill learning is accomplished using various modern teaching methods and tools that take into account the educational level of students and learners, as well as their physical and mental abilities and individual differences. Consequently, we will achieve a high level of skill performance. The learning process can only be initiated by studying the numerous variables that accompany this process, including the type of activity, the kind of skill to be learned, the available resources, the age group, the level of learning and experience, gender, and learning methods and approaches. The realization of desires and ambitions in various aspects of life, including sports, has come about due to scientific progress in all fields. Competition has increased and intensified among athletes in multiple races to achieve the best results by developing the level of performance, each according to their effectiveness, in addition to achieving good results and breaking records. On this basis, the interest of specialists and those interested in physical education has increased to involve various sciences to serve the sports movement, whether in the educational, educational, or training aspects. The expansion of the base of the sports movement has a significant and clear reflection on the cultural development and advancement of society. Research is still ongoing in the field of teaching methods, with a variety of teaching strategies used for the purpose of finding the most appropriate scientific means and methods that serve the sports movement and scientific progress.

The educational process is progressing at an incredible pace today, especially in the field of sports and in all team and individual games, in teaching their basic skills. The game of artistic gymnastics is one of the particular games with many basic skills. This is due to the requirements of its six apparatuses and their differences, as some of them are skills through hanging, others through support, and others through running and jumping. Among these skills are the forward roll and the handstand, which are considered complex skills due to their specificity, as each skill has a different motor and educational path in learning from the other skills. Therefore, they require different and varied teaching methods and approaches to be understood easily and mastered. Teaching methods are of great importance in delivering educational material to students. The material must be closely linked to the style or method used to achieve the desired goals successfully. It is necessary to find diverse strategies to be as compatible as possible with the students' tendencies, interests, and diverse abilities, and to follow methods that focus on creativity and interaction between the teacher and the learner, contributing to achieving the goals. Teaching strategies are considered necessary means used to develop and enhance school sports activities and have a fundamental and significant role in organizing the relationship between the teacher, the learner, and the educational material during the teaching session, as the diversity in the use of these strategies works to reduce the routine and boredom that afflicts students as a result of using a single teaching method. A skilled teacher can use more than one method to deliver his educational material to his students. Therefore, he must pay attention to the tendencies and attitudes of his students towards his teaching session.

One such strategy is the Jigsaw strategy, a cooperative learning strategy that actively engages students in two types of groups: primary and expert. This strategy is of great importance in helping students participate in classroom activities, maintaining teacher control over classroom instruction, and creating a learner-centered learning environment. Jigsaw is a teaching strategy in which learners work in groups of 5-6 individuals. Each learner is given a portion of the lesson, thus becoming an expert in their respective portion after receiving the assignments. Learners then reorganize themselves into other groups called expert groups to study the topic and prepare to teach it to learners who are members of the original groups. All learners then take individual tests on the entire topic, and all learners in the group are expected to learn the specific topic of the lesson. Hence, the importance of the research lies in bringing the student to the desired state of learning, for which all possibilities are harnessed based on the philosophy or educational objectives of the curricula. In the face of these challenges that emerged, the need arose to use new technologies in the learning and teaching processes. Cooperative learning was one of the essential educational topics that received the attention of researchers in the field of education, due to its importance in preparing learners for life, and taking into account individual differences between them. Therefore, the researcher resorted to using the Jigsaw strategy in teaching the skills of forward roll and handstand in artistic gymnastics to the best possible level for the students.

It's worth noting that the educational process, especially in the field of motor skills, is no longer limited to simply presenting information or demonstrating skill performance traditionally. Instead, it focuses on activating the student's role in an active learning environment based on interaction and group

participation, in line with contemporary educational trends that emphasize active and constructive learning. From this perspective, interest has expanded in teaching methods and strategies that contribute to developing motor performance and integrating the learner's mental and emotional aspects. These include cooperative strategies that place the learner in a position of responsibility and initiative. Numerous studies have shown that collaborative learning strategies, such as the Jigsaw strategy, effectively contribute to raising the level of skill and cognitive achievement by enhancing team spirit, developing communication skills, and increasing motivation toward learning, particularly in activities that require high concentration and precise movement control, such as artistic gymnastics. Both the front roll and handstand are essential formative skills that rely on neuromuscular coordination, balance, and precision. This requires teaching methods that allow for repetition, peer feedback, and enhanced student confidence in a supportive, non-traditional environment. The integration of the motor dimension and group collaboration provides a more effective learning environment for students. The Jigsaw strategy highlights the importance of the "expert learner" who transfers knowledge to their peers, enhancing their personal understanding of the information and supporting the educational process through learning through explanation, repetition, and active participation. This strategy also enables teachers to monitor each student's progress more accurately and provides opportunities for constructive intervention to enhance individual and group learning.

Therefore, integrating modern strategies such as jigsaw into the teaching of artistic gymnastics skills is not merely a new teaching method; it represents a systematic shift in understanding the roles of the student and teacher in the educational process. It establishes a learning environment based on cooperation, interaction, and the integration of theoretical understanding and practical performance. Hence, the importance of this research lies in enabling students to achieve the desired state of learning, harnessing all potentials based on the philosophy and educational objectives of the curriculum. In light of these emerging challenges, the need to utilize new technologies in the learning and teaching processes has arisen. Cooperative learning has been a significant educational topic that has garnered the attention of researchers in the field of education, given its importance in preparing learners for life and accommodating individual differences. Therefore, the researcher resorted to using the jigsaw strategy to teach students the skills of front roll and handstand in artistic gymnastics, achieving the best possible level for them.

Research Problem:

In the learning process, students no longer play the role of mere recipients and followers of orders. This leads to feelings of routine, boredom, and a weakening of their motivation to learn. This leads to increased effort and a significant loss of time during the lesson, attempting to teach and correct student errors. This leads to students not taking responsibility for their own learning. This negatively impacts the process of developing and improving student performance. The goal is to make students actively involved in this process. Most of the methods used, according to the researchers, are of a particular standard but do not take into account individual differences among students. Therefore, one of the most critical problems that prompted the researcher to delve into this topic and test it in the field is to identify the impact of using the Jigsaw strategy on students' learning of the forward roll and handstand skills in artistic gymnastics.

Research Objectives:

1. The research aims to develop educational units using the JIGSAAW strategy to teach students the skills of front roll and handstand in artistic gymnastics.

2. To identify the effect of the JIGSAAW strategy on students' learning of the skills of front roll and handstand in artistic gymnastics.

Research Hypotheses:

- The JIGSAAW strategy has a positive effect on students' learning of the skills of front roll and handstand in artistic gymnastics

Research Areas:

Human Domain: Second-year students - College of Physical Education / University of Kufa.

Spatial Domain: Gymnastics Hall within the College.

Temporal Domain: From August 14, 2024, to September 20, 2024.

RESEARCH METHODOLOGY AND FIELD PROCEDURES

Research Methodology:

The researcher chose the experimental method because it was well-suited to the nature of the problem and the needs of the experiment. He employed a tightly controlled experimental method with two groups: the control and the experimental, and administered pre- and post-tests.

2-2 Research Community and Sample:

The researcher deliberately identified the research community from the 2nd year students at the College of Physical Education and Sports Sciences / University

of Kufa for the academic year 2024-2025, totaling 82 students distributed among halls. The reason for this intentionality was to suit the research vocabulary to the subject of gymnastics. The research sample was selected using a systematic random method (lottery), where 20 students were selected and distributed equally between the control and experimental groups.

Homogeneity of the research sample:

Variables	Measurement	S	The mediator	A	Coefficient of skewness	Result
Height	cm		171	1.877	0.391	Homogeneous
Body Mass	kg	74.811	74.5	1.655	0.352	Homogeneous
Chronological Age	year	19.6	19	0.742	0.283	Homogeneous

To control the research variables associated with the research experiment and to determine the validity of the sample and the normal distribution of its variable values, the researcher established sample homogeneity in terms of mass, height, arm length, and age using the skewness coefficient.

Table 1 shows the homogeneity of the research sample.

Data Collection Methods:

To achieve the research objectives and obtain accurate and valid results, the researcher utilized the following methods and devices:

1) Arab and foreign scientific sources and references.

2) A survey form for the opinions of experts and specialists.

3) One (1) electronic computer.

4) Two (2) Canon cameras.

5) A gymnastics hall.

6) Indicators.

7) Flexes to illustrate the Jigsaw skills strategy.

Field Research Procedures:

Test Description:

First: Handstand Skill Performance Evaluation Test (Hamdan, 2012, p. 46)

Objective: To evaluate the technical performance of the handstand skill.

Test Performance: Standing on the mat, upon hearing the word "ready," the examinee assumes a ready position. Upon hearing the word "start," the examinee performs the skill.

Second: Forward Roll Test (Raisan, 1989, p. 189)

- Purpose of the Test: To measure the forward roll skill.

- Test Performance Method: The examinee sits on all fours at the beginning of the line drawn by the instructor and then performs the movement.

- Scoring Method: The learner is given (3) attempts, and each correct attempt is scored (10).

Exploratory Experiment

The researcher experimented to assess the capacity and suitability of the support team, equipment, tools, and tests he will use in the study. It is a mini-experiment or test in preparation for a larger test.

The researcher conducted his exploratory experiment on a group of 4 second-year students on Thursday, August 15, 2024. The researcher ensured that all necessary materials for the experiment's success were available. The researcher explained the test instructions to his support team and the steps involved.

Pre-Test

"The pre-test is one of the means of evaluation, measurement, diagnosis, and teaching in curricula and programs for all levels and age groups." They play a clear role in indicating progress and success in achieving objective goals." Pre-tests were conducted for the study samples, comprising the control and experimental groups, in the college's gymnastics hall on August 16, 2024, after establishing the test conditions, including time, location, tools used, implementation methods, and support staff.

Main Experiment: Implementing the JIGSAW Strategy on Students:

The study aimed to determine the effect of the JIGSAW strategy on students' learning of the front roll and handstand skills in artistic gymnastics. The educational units included eight units, each lasting 90 minutes. Time was scientifically allocated across the educational units, and the units were prepared according to the model for the skills being researched. The educational units were implemented on the research sample from August 17, 2024, to September 18, 2024, at a rate of two units per week. Post-test Measurements:

After completing the educational units prepared according to the JIGSAW strategy, the researcher administered a post-test to students in both the experimental and control research groups at the

second stage. The post-test included testing the students' front roll and handstand skills in artistic gymnastics. The students were tested under the same conditions, specifications, and terms as the pre-test. The post-test was conducted on Thursday, September 19, 2024, to obtain more accurate results under the direct supervision of the researcher.

Statistical Methods

The researcher used SPSS to process and extract data.

Presentation and Discussion of the Pre- and Post-test Results for the Control Group:

Table 2 shows the test results for the control group.

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

Statistical Parameters / Researched Variables	Unit Of Measurement	Tribal		The Distant		Calculated Value Of (T)	Test Significance Level Sig.	Type Of Significance
		S	±A	S	±A			
Forward Roll	Degree	3.63	0.991	5.12	0.821	Semantic	0.006	Semantic
Handstand	Degree	3.51	0.833	5.45	0.894	Semantic	0.002	Semantic

Table (3) shows the results of the tests for the experimental research group.

Statistical Parameters / Researched Variables	Unit Of Measurement	Tribal		The Distant		Calculated Value Of (T)	Test Significance Level Sig.	Type Of Significance
		S	±A	S	±A			
Forward roll	Degree	3.82	0.918	7.12	0.834	5.034	0.000	Semantic
Handstand	degree	3.62	0.966	7.18	0.822	6.161	0.000	Semantic

3-3 Presentation and discussion of the results of the post-tests for the control and experimental groups:

Table (4) shows the results of the post-tests for the control and experimental research groups.

Statistical Parameters / Researched Variables	Unit Of Measurement	Tribal		The Distant		Calculated Value Of (T)	Test Significance Level Sig.	Type Of Significance
		S	±A	S	±A			
Forward roll	درجة	5.12	0.821	7.12	0.834	4.034	0.000	Semantic

Handstand	درجة	5.45	0.894	7.18	0.822	4.113	0.000	Semantic

DISCUSSION OF THE RESULTS

By observing Tables (2-3), it is clear that both the experimental and control groups achieved improvement in the students' level of learning of the two skills under study. Learning any skill can be accomplished through any method used, but learning rates vary depending on the method and its efficiency in delivering the material to the student. Therefore, we find that the control group achieved a percentage of learning as a result of the method used by the teacher, which is the imperative method, as did the experimental group. The primary goal of each educational unit in any game is to teach the material the student is required to learn. If the learning method is correct, repetitions are sufficient, and the educational period is complete and comprehensive. This includes exercises, explanations, presentations, practical exercises for learning, and the use of feedback. In addition, the educational curriculum followed by the teacher must be consistent, such that it is suitable for beginner students and leads to a clear improvement in learning and performance. This is what the sources emphasized: "Clarity of objectives and their specification in behavioral forms or specific performance levels is meaningful and effective" (Fouad, 1989, p. 177). The results presented in Table 3 for the students' artistic gymnastics skills test of "front roll and handstand" also showed significant differences between the pre- and post-tests, in favor of the post-test for the experimental group. The researcher attributes this to the use of the JIGSAW strategy, which played a significant role in developing the experimental group's performance level. This helped learners understand and comprehend the finer details of the skills through a gradual presentation, enabling them to grasp all aspects of the skill. In addition, another factor that contributed to improved skill learning and mastery was the use of the JIGSAW strategy, which enabled students to identify errors they had made and compare their performance with the questions posed by the teacher. These two skills are gradual learning, starting from easy to complex, and then performing them thoroughly. Dividing the skill into parts through the questions posed and performing them in a piecemeal manner is more appropriate for students.

Furthermore, the JIGSAW strategy generated desire and enthusiasm among students, which helped them control performance requirements, as it provided auditory and visual feedback. This strategy also contributed to encouraging students to think, research, gather information, and make decisions. It increased the number of repetitions, which are essential requirements for learning, and enhanced their ability to perform the skills. (Dhafer Hashem, 2002)

The results extracted from Table 4 also demonstrate the superiority of the experimental group over the control group, as the experimental group used the GESCO strategy. In contrast, the control group relied on the traditional teacher strategy. This strategy focused on the basic steps of the skill, which contributed to achieving a clear difference in performance technique. Therefore, the skill was divided into stages, with reviews and groups allocated for each stage, which facilitated dialogue and interaction between them to reach the correct technique. This performance was then practiced for an extended period, resulting in the effective acquisition of skills. It is worth noting that learning methods are considered a crossroads of thinking, personality, and motivation, as they are related to the type of strategies individuals tend to use when facing a specific situation or choosing a specific method to process information. (December Habib, 2010, 162)

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. The research results clearly demonstrate the positive impact of the Jigsaw strategy on learning the front roll and handstand skills in artistic gymnastics among students in the College of Physical Education. The results confirm that learning using this detailed and gradual strategy led to significant improvements in skill performance compared to the traditional method used with the control group.

2. The Jigsaw strategy developed by the researcher has proven effective in performing the front roll and handstand skills in artistic gymnastics for students (for the experimental group).

3. There is an improvement in the control group's learning of the front roll and handstand skills in artistic gymnastics for students.

4. The experimental group that used the JIGSAW strategy to learn the front roll and handstand skills in artistic gymnastics outperformed the control group on post-test measurements.

5. The impact of cooperative learning on improving motor skills, as demonstrated by the Jigsaw strategy, enhances interaction among students within

small groups, facilitating the exchange of information and practical clarification of concepts and skills. Dividing skills into small parts allowed students to focus on each step precisely, resulting in improved final performance.

6. Increased motivation and active participation: Assigning responsibilities to students, with each student being an "expert" in a specific part, increased their motivation to participate and learn effectively. The learning process shifted from passive learning to active learning based on discussion, interpretation, and practice, increasing comprehension and reducing errors in performance.

7. Enhancing critical thinking and problem-solving: The Jigsaw strategy provided opportunities for students to self-evaluate their performance and exchange constructive feedback with their peers, helping develop critical thinking and problem-solving skills related to improving motor technique. This is particularly important in sports that require high-level movement control.

8. The strategy is appropriate for the complex nature of motor skills, which require high precision and focus in artistic gymnastics. The strategy breaks down the skill into sequential elements, with each element learned separately and then linked together. This makes it easier for learners to grasp the entire skill more effectively than traditional methods, which may focus on learning the skill as a whole at once.

Recommendations

1. Use the JIGSAW strategy to teach students basic gymnastics skills.

2. Work to organize the curriculum content with an educational design based on the steps of the JIGSAW strategy, consistent with achieving the educational objectives set in other sporting events.

3. Conduct similar research and studies to compare the JIGSAW strategy with other strategies or with various teaching methods to determine their impact on learning basic gymnastics skills and other sports.

4. Promote the application of the JIGSAW strategy in teaching various sports skills in colleges of physical education, given its clear positive impact on developing performance and improving learning.

5. Organize training programs for teachers and trainers to familiarize them with how to design integrated educational units based on the JIGSAW strategy and employ it effectively in practical classrooms.

6. Develop the content of educational curricula to include more cooperative learning strategies, especially in the areas of motor and technical skills, in line with the development of modern teaching methods.

7. Encouraging future scientific research to compare the Jigsaw strategy with other strategies in various sports fields, with a focus on its impact on improving learning skills and interaction among students.

8. Using educational technology to support the Jigsaw strategy, such as explanatory videos and interactive applications, to support the educational process and enhance understanding and application.

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