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Effect of Practical Demonstration Strategy on Skills of Forward Roll and Headstand in Artistic Gymnastics for Students

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ABSTRACT

The use of practical demonstration techniques in teaching certain feats, such headstands and front rolls, is crucial for raising students' ability levels. Additionally, it improves their involvement and comprehension of skills in a more profound and unique way. The purpose of the study was to determine how students' front roll and headstand skills in artistic gymnastics were affected by practical demonstration techniques. Because the experimental research approach is consistent with tackling the topic under investigation, the researcher employed it. He created two comparable groups: the experimental group and the control group. For the academic year 2024–2025, the research community represented second-year students at the University of Wasit's College of Physical Education and Sports Sciences. A total of 110 students were divided among five classes, each with twenty-two students: A, B, C, D, and E. A lottery was used to choose Class (A) as the experimental group and Class (C) as the control group. The researcher came to the conclusion that some rolling abilities were developed as a result of the practical demonstration technique. Second-year students do headstands and forward rolls.

Keywords: Demonstration strategy; Forward roll; Headstand

ABSTRAK

Penggunaan teknik demonstrasi praktis dalam mengajarkan prestasi tertentu, seperti headstand dan front roll, sangat penting untuk meningkatkan tingkat kemampuan siswa. Selain itu, ini meningkatkan keterlibatan dan pemahaman keterampilan mereka dengan cara yang lebih mendalam dan unik. Tujuan dari penelitian ini adalah untuk mengetahui bagaimana keterampilan front roll dan headstand siswa dalam senam artistik dipengaruhi oleh teknik demonstrasi praktis. Karena pendekatan penelitian eksperimental konsisten dengan menangani topik yang sedang diselidiki, peneliti menggunakannya. Dia menciptakan dua kelompok yang sebanding: kelompok eksperimental dan kelompok kontrol. Untuk tahun akademik 2024–2025, komunitas penelitian mewakili mahasiswa tahun kedua di Sekolah Tinggi Pendidikan Jasmani dan Ilmu Olahraga Universitas Wasit. Sebanyak 110 siswa dibagi menjadi lima kelas, masing-

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masing dengan dua puluh dua siswa: A, B, C, D, dan E. Lotere digunakan untuk memilih Kelas (A) sebagai kelompok eksperimental dan Kelas (C) sebagai kelompok kontrol. Peneliti sampai pada kesimpulan bahwa beberapa kemampuan bergulir dikembangkan sebagai hasil dari teknik demonstrasi praktis. Siswa tahun kedua melakukan headstand dan forward roll.

Kata Kunci: Strategi demonstrasi: Guling depan; Berdiri di kepala

INTRODUCTION

World has recently witnessed remarkable development in various fields, especially in sports domain, where sports have become one of fundamental axes in building individuals and developing their diverse capabilities (Babayev, 2025; Ghildiyal, 2015). Gymnastics is one of the sports that has drawn a lot of attention because of its distinct artistic and motor nature, which combines creativity and discipline. It also helps people develop their neuromuscular coordination and improve their motor perception, as well as their ability to control their bodies and express movement with confidence and accuracy (Anderson et al., 2022; Hsieh et al., 2017).

The public likes gymnastics because of its variety of talents and attractiveness. It also serves as an important educational entry point for acquiring basic skills such as tucked forward roll and headstand, both of which require a good understanding of sequence of movements and precise balance in performance (Al-Sababha, 2023).

In light of educational and pedagogical development, many modern teaching methods and strategies have emerged that aim to enhance students' understanding of motor and skill content. Among most prominent of these methods is "Practical Demonstration Strategy," which relies on presenting concepts and skills through direct practical demonstration or by using illustrative educational media (Alali et al., 2026; Ewerton et al., 2015). This contributes to facilitating learning process, especially in skills that require precise visual and motor perception, as is case in gymnastics skills (Adams et al., 2025; Afrouzeh et al., 2024).

Therefore, integrating practical demonstration strategy into teaching skills such as tucked forward roll and headstand is considered an effective method for improving level of skill performance among students, and it also enhances their interaction and understanding of skills in a deeper and more distinctive way. Herein lies importance of research (Rymal, 2018).

Gymnastics floor skills are among important fundamentals in gymnastics, as they include a set of motor and artistic skills that develop body control, balance, and accuracy in performance. These skills form a necessary foundation for acquiring more advanced skills later. Among them, tucked forward roll and headstand stand out as essential skills that students must master, given their significant role in building motor coordination, body awareness, and proper movement sequencing (Ferrari et al., 2018; Riabchenko et al., 2025).

Through researcher's practical and academic experience as a gymnastics professor, It was noted that most of the teaching strategies now employed to impart these abilities are inflexible and depend on conventional techniques that lack interaction and diversity. This leads to a weak comprehension of skills and difficulty in mastering

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them among students, and it reduces their motivation towards learning and development.

Based on importance of employing modern teaching strategies that align with nature of these skills, The researcher chose to use a practical demonstration technique to investigate this issue, given its effective role in facilitating delivery of motor skills through integration of practical demonstration and illustrative media, which contributes to improving students' performance and overcoming difficulties associated with traditional presentation methods.

Research Objectives: To determine the impact of a practical presentation technique on students' artistic gymnastics tucked forward roll and headstand skills. To determine how students tucked forward roll and headstand skills differed between the experimental and control groups on post-tests in artistic gymnastics.

Research Hypotheses: Practical demonstration strategy influences skills of tucked forward roll and headstand in artistic gymnastics for students. Students' artistic gymnastics abilities in the tucked forward roll and headstand differed between the experimental and control groups in the post-tests.

Research Scope: Human Scope: Second-year students / College of, Physical Education and Sports Sciences, Time Scope: From 3/1/2025 to 11/4/2025,

Spatial Scope: Sports Hall / College of Physical Education and Sports Sciences.

Definition of Terms: Practical Demonstration Strategy: An activity presented or offered by teacher or learner to class through use of various educational aids (Maroun, 2008, 181) (4). Or it is: Re-enacting a series of ordered or planned events to depict a specific phenomenon (Abu Sari', 2008, 178).

METHODS

The researcher employed an experimental design with two equivalent groups experimental and control and the experimental research technique since it is appropriate for resolving the research topic.

The research population was determined to be second-year students at the University of Wasit's College of Physical Education and Sports Sciences for the academic year 2024–2025. There were 110 students total, divided into five sections, each with 22 students: A, B, C, D, and E. Section (A) and Section (C) were selected by lottery as the experimental and control groups, respectively. Ten students made up the exploratory sample, which was chosen at random by the researcher from section (D). This resulted in a sample size of 49.1% of the entire research population.

The researcher used the skewness coefficient to control all variables that can impact performance (height, mass, and chronological age) in order to validate homogeneity among the study sample members and verify that the results are moderately distributed. The corresponding skewness coefficient values were (-0.655), (0.743), and (-0.651). The homogeneity of the research sample participants is indicated by the fact that all values were contained within (± 1). Following the division of the sample into two comparable groups (control and experimental), the researcher confirmed their equivalency to make sure that both groups began at the same baseline, as indicated in Table (1).

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Table 1. Displays sample equivalency for the research variables being examined

Variables	Unit of Measurement	Experimen tal Group		Control Group		Calculat ed T value	Confid ence Level	Sig. typ e
		Mea n	St.d	Mea n	St.d			
Tucked Forward Roll	Score	3.045	0.785	2.909	0.921	0.528	0.6	Insi g.
Headstand	Score	3.210	0.867	3.323	0.892	0.692	0.523	Insi g.

(*) If the variance level is less than 0.05, it is significant at the confidence level of 0.05.

Data Collection Tools: Scientific observation, Objective tests, World Wide Web (Internet), Arabic and foreign sources.

Devices Used in Research: Stopwatch (2) made in Japan, Scale for measuring student mass, Sartorius brand, German origin, (2), Laptop (Dell brand, Korean origin).

Equipment Used in Research: Measuring tape, Gymnastics mat.

Field Research Procedures: Defining Research Variables two research variables were defined based on researcher's personal experience as a specialist in teaching artistic gymnastics, which are (tucked forward roll, headstand).

Evaluating Artistic Performance

The researcher video-recorded the performance of two abilities (pre and post) for both the experimental and control groups and then delivered them to evaluators on CDs along with a specific assessment form (authorized by the Iraqi Federation). The talents were assessed by three judges, and the sum of the three scores was divided by three to obtain the final score for each skill, keeping in mind that the final score for form ranges from 0 to 10.

Exploratory Experiment

Ten students from the College of Physical Education and Sports Sciences/University of Wasit's sports hall served as the exploratory sample for the study, on Sunday, January 5, 2025. "This experiment serves as field training for researcher to identify and overcome shortcomings in main experiment" (Jabri, 2024, p.75). It aimed to:

1. Calculate how long the testing (performance evaluation) will take.
2. Verify the assistance team's effectiveness and specify each person's responsibilities.
3. Determine validity of tools and equipment used in research.
4. Identify difficulties and shortcomings that may accompany performance of tests.
5. Evaluate if the practical demonstration technique is appropriate for the level of the study sample.

Pre-tests

On Tuesday, January 7, 2025, at 10:00 AM, the researcher administered the pre-tests (pre-assessment) to the experimental and control research groups in the sports hall of the College of Physical Education and Sports Sciences/University of Wasit. In order to create settings that were as identical as feasible for the post-tests, the test conditions—

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including location, time, and research instruments—were standardized.2.4.5 Main Experiment (Application of Practical Demonstration Strategy): main experiment began on Sunday, January 12, 2025, at 10:30 AM and ended on Wednesday, February 26, 2025. In this phase, " practical demonstration strategy was applied to experimental group individuals in main section. researcher considered aspects emphasized by this strategy, starting from method of presentation and clarification, using verbal explanation with direct practical performance, then presenting skills gradually (step-by-step), and utilizing video or slow-motion demonstrations to explain technical points. Then, observing students' performance accurately and providing immediate feedback to encourage self and group evaluation to motivate learning and urge interaction and participation, and opening discussion after each practical demonstration and involving students in constructively evaluating their peers' performance to create an encouraging, non-sarcastic environment. As for control group, their educational units followed traditional method. educational units continued for (7) weeks, with two units per week, totaling (14) educational units."

Post-tests

On Sunday, March 2, 2025, the researcher administered post-tests (post-assessment) to both research groups using the same methodology as the pre-tests. In terms of time, location, and testing instruments, the researcher was eager to create identical circumstances for pre-tests and their needs for post-tests.

Statistical Methods: The following laws were extracted using the statistical software (SPSS26): The arithmetic mean. The standard deviation. The median. The coefficient of skewness. For paired samples, use the t-test. For independent samples, use the t-test.

RESEARCH RESULTS

Display and Evaluation of Pre- and Post-test Findings for Variables (Headstand, Tucked Forward Roll) for Both Research Groups:

Pre- and post-test results for the experimental group's variables (headstand, tucked forward roll) are presented and analyzed:

Table 2. Displays the Experimental Group's Pre- and Post-Test Results.

Variables	Unit of Measurement	Experimental Group		Control Group		Calculated T value	Confidence Level	Sig. type
		Mean	St.d	Mean	St.d			
Tucked Forward Roll	Score	3.045	0.785	4.136	0.940	5.555	0.000	Sig.
Headstand	Score	3.210	0.867	4.988	0.764	5.343	0.000	Sig.

(*) Significant at confidence level (0.05) if error level \leq (0.05).

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Display and Evaluation of Pre- and Post-test Findings for the Control Group's Variables (Headstand, Tucked Forward Roll)

Table 3. Displays the Control Group's Pre- and Post-Test Findings.

Variables	Unit of Measurement	Experimen tal Group		Control Group		Calculat ed value	Confid ence Level	Sig. typ e
		Mea n	St.d	Mea n	St.d			
Tucked Forward Roll	Score	2.909	0.921	3.545	0.962	5.137	0.000	Sig.
Headstand	Score	3.323	0.892	4.112	0.859	2.456	0.001	Sig.

(*) Significant at confidence level (0.05) if error level \leq (0.05).

Presentation of Post-test Results for Both Experimental and Control Groups

Table 4. Shows Post-Tests for Both Experimental and Control Groups

Variables	Unit of Measurement	Experimen tal Group		Control Group		Calculat ed value	Confid ence Level	Sig. typ e
		Mea n	St.d	Mea n	St.d			
Tucked Forward Roll	Score	4.136	0.940	3.545	0.962	2.06	0.036	Sig.
Headstand	Score	4.988	0.867	4.112	0.859	2.29	0.024	Sig.

(*) If the variance level is less than 0.05, it is significant at the confidence level of 0.05.

DISCUSSION

Considering every outcome was statistically significant, it is evident from examining the data in Tables (2), (3), and (4) that both the experimental and control groups have significantly improved in tucking forward roll and headstand. Nonetheless, the experimental group outperformed the control group in terms of development.

The researcher credits the adoption of a practical demonstration technique for the experimental group's advantage over the control group. This strategy provides practical learning opportunities that help students observe correct performance of movement and its precise details visually and directly. Practical demonstrations enable students to link theoretical explanation with practical application, which facilitates their understanding of stages of motor performance and sequence of steps, thereby reducing

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common errors in execution. Faten Mahmoud indicates that this strategy makes knowledge presented to students linked to application, which leads to faster comprehension and assimilation of information (Faten, 2018). This is entirely consistent with what was observed and statistically confirmed in development of tucked forward roll and headstand skills, because direct link between theoretical explanation and practical demonstration helped learners understand motor mechanics of each skill more deeply. When using practical demonstrations, skill was no longer just verbal instructions that were difficult to visualize but became a visible motor model that could be imitated and whose details could be understood, such as hand placement, weight distribution, and movement timing (Mohsen et al., 2021). This integration between theoretical knowledge and practical application led to accelerating learning process and significantly improving performance quality, especially in skills that require precision in balance and motor coordination, such as tucked forward roll and headstand. This strategy also worked to increase students' motivation, as watching correct performance live and realistically aroused their enthusiasm and desire to imitate model and achieve same level of mastery. Practical demonstrations enhance feeling of confidence and ability to achieve, which drives learners to actively participate in lesson and continuously strive to improve performance. This is what Abu Shuraykh (2008, 24). Indicated, that one of most important purposes of practical demonstration strategy is to stimulate students' motivation towards learning.

CONCLUSIONS AND RECOMMENDATIONS

Practical demonstration strategy led to development of some of tucked forward roll and headstand skills among second-year students. When it came to helping second-year students strengthen their tucked forward roll and headstand skills, the practical demonstration tactic outperformed the instructor's way.

Instructors must use practical demonstration techniques to help students acquire some ground movement abilities in artistic gymnastics, especially tucked forward roll and headstand skills, because most educational units lack this type of strategy. Conducting similar research and studies using practical demonstration strategy for different age groups and both genders, and for other sports activities.

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