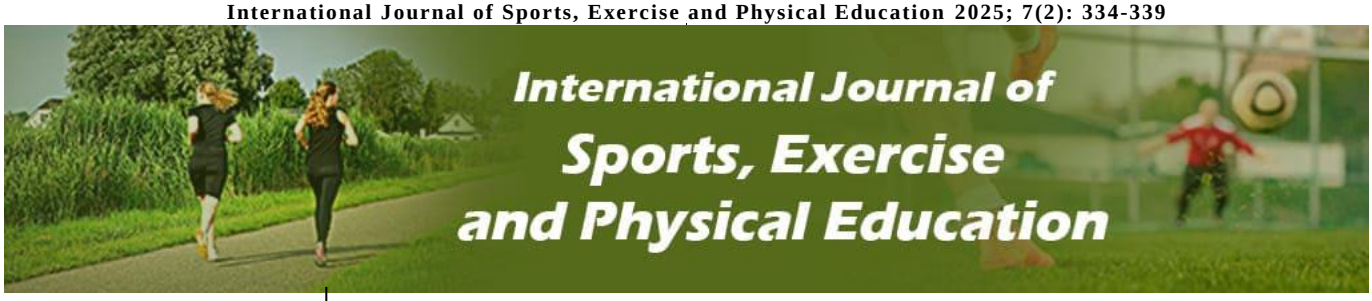

ISSN Print: 2664-7281
ISSN Online: 2664-729X
Impact Factor: RJIF 8.15
IJSEPE 2025; 7(2): 334-339
https://www.sportsjournals.net
Received: 12-06-2025
Accepted: 17-07-2025

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The effect of an educational program based on autonomy in learning some Greco-Roman wrestling holds among juniors

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DOI: https://www.doi.org/10.33545/26647281.2025.v7.i2e.244

Abstract
The significance of this study lies in employing a relatively modern approach—autonomy-based learning—and investigating its effect on acquiring selected wrestling holds in Greco-Roman wrestling. The study aimed to design an educational program based on autonomy and to examine its impact on learning certain wrestling holds. The researcher hypothesized that there would be statistically significant differences between the pre- and post-tests of the experimental and control groups, in favor of the experimental group.
The experimental method was applied using pre- and post-tests for both groups. The research community consisted of junior wrestlers from Al-Ezzah Sports Club (N = 12). The sample was selected by systematic randomization (lottery method) and divided into two groups: experimental (n = 5) and control (n = 5), while two wrestlers were assigned for the pilot study. Thus, the research sample represented 83.33% of the population. The pilot study was conducted on wrestlers outside the research sample.
The pre-tests were administered to both groups, followed by the main experiment, which lasted for 8 weeks with 3 instructional sessions per week (Sunday, Tuesday and Thursday), totaling 24 sessions. The three wrestling holds under study were distributed across 8 sessions for each hold. Each instructional unit included the three stages: preparatory, main, and concluding. The sessions also incorporated scientifically designed exercises prepared by the researcher, who, being a wrestler himself, was well-versed in constructing such exercises.
The instructional unit began with the presentation of the educational program in the preparatory stage, prior to warm-up, to avoid disrupting the cognitive processes of the junior wrestlers. In the main stage, the principle of repetition was emphasized to reinforce the motor program of each skill, in addition to providing immediate feedback on performance. The control group, however, continued training under the traditional coach-centered method, which relied on direct demonstration and explanation of the skills.
After the post-tests were administered, results were tabulated and statistically analyzed. Based on the findings, the researcher concluded that the autonomy-based educational program had a significant positive effect on enhancing the performance level of learners by broadening their cognitive capacities and enabling them to generate novel solutions to different situations, regardless of their difficulty. The researcher recommends employing visual stimuli in the learning process, as they produce positive outcomes.

Keywords: Educational program, autonomy, wrestling

1. Introduction
1.1 Research Definition
1.1.1 Introduction and Research Significance
The era we live in is characterized by rapid change and continuous renewal in response to the ongoing growth of knowledge and social transformations. Learning, with its inherent features, has become responsible for every form of progress at this stage, serving as a national necessity for building the country's self-reliance and reinforcing its confidence in the future. Hence, it is imperative to select ideas that can be applied over time, producing higher levels of athletic performance.
The training process aims to enhance the athletic level in thought, application, methodology, and content. Focusing on educational aspects in the right direction places us on the path of

progress in building the sporting community to which we aspire. Moreover, when education is properly structured and guided both quantitatively and qualitatively, it becomes an effective force in changing athletes' behaviors and in preparing athletes capable of developing themselves. Sound educational foundations orient the athlete's activities toward fields that aim to enhance physical and motor abilities.

Motor learning is one of the most significant domains affecting the athlete, as it represents an essential and fundamental approach to developing and preparing him comprehensively on scientific bases. The athlete's ability to exert effort depends on many variables, foremost of which is the acquisition and execution of skills through demonstration and explanation supported by visual stimuli, which play an essential role in reinforcing motor imagery for the learner. Educational programs thus have a clear impact on preparing learners with integrated skills, and for this reason, such programs must be based on carefully studied scientific foundations.

Various methods and teaching aids can be employed to facilitate skill learning, aiming to stimulate the learner's mind, aid attention, and improve comprehension. Among these, demonstration through visual stimuli is considered one of the most important factors in providing learners with effective feedback.

The autonomy-based approach is one of the most significant methods that grants the learner the freedom to begin skill acquisition according to his capabilities and at the stage that matches his potential. As (Al-Sayyid Abd Al-Latif, 2011, p.75) [2] notes: "Autonomy is a vital human need that governs much of human behavior across various situations. It is characterized by comprehensiveness, flexibility, and integration."

The researcher believes that integrating the autonomy-based approach with certain wrestling holds contributes to self-realization among wrestlers by giving them the opportunity to participate in skill learning in line with their abilities and developmental stage. Therefore, the significance of this research lies in employing autonomy in learning selected Greco-Roman wrestling holds, thereby supporting learners in this sport and facilitating the acquisition of these skills according to their developmental stage.

1.2 Research Problem

Multiple teaching methods have been applied across different sports, each playing a role in skill acquisition. However, the question remains: which method has the most substantial effect on learning skills specific to a given sport? Through reviewing several scientific sources, the researcher sought to introduce a new method and compare it with another to assess its effect on the sample under study.

Drawing on his experience as an active wrestler, the researcher observed that most wrestlers rely on the traditional instructional method used in training units, where the coach explains and demonstrates the skill directly. This, in turn, makes the wrestler a passive recipient of information, limiting his ability to demonstrate independence in learning wrestling holds. For this reason, the researcher decided to apply the autonomy-based approach to a group of junior wrestlers and investigate its effect on their learning outcomes.

1.3 Research Objectives

1. To design an educational program based on autonomy.
2. To explore the effect of autonomy on learning selected wrestling holds among junior wrestlers.

1.4 Research Hypotheses

1. There are statistically significant differences between the pre-test and post-test results of the experimental and control groups in learning selected wrestling holds among junior wrestlers.
2. There are statistically significant differences between the post-test results of the experimental and control groups in favor of the experimental group.

1.5 Research Fields

- **Human Field:** A sample of junior wrestlers from Al-Ezzah Sports Club.
- **Time Field:** From May 12, 2025, to July 27, 2025.
- **Place Field:** The wrestling hall at Al-Ezzah Sports Club.

2. Research Methodology and Field Procedures

2.1 Research Method

The researcher employed the **experimental method** with two equivalent groups (experimental and control) using pre- and post-tests, as it suits the nature of the research problem.

2.2 Research Population and Sample

The research population consisted of 12 junior wrestlers from Al-Ezzah Sports Club. The sample was selected through systematic randomization (lottery method) and divided into two groups: experimental (n = 5) and control (n = 5), while two wrestlers were assigned for the pilot study. Thus, the research sample represented 83.33% of the total population.

The researcher ensured homogeneity among the sample subjects in morphological variables, as presented in Table (1).

Table 1: Homogeneity of the Research Sample

Variables	Sample Size	Unit of Measurement	Mean	Std. Dev.	Median	Skewness
Height	10	cm	142.4	1.212	142	0.990
Body Mass	10	kg	58.23	3.02	59.01	0.774
Chronological Age	10	years	13.34	2.91	14.25	0.938

2.3 Tools, Instruments, and Equipment Used

2.3.1 Data Collection Tools

1. Scientific sources and references.
2. The Internet.
3. Observation.
4. Tests and measurements.

2.3.2 Equipment and Instruments

1. HP computer (Korean-made).
2. LG television (32-inch, Korean-made).
3. Wrestling hall.
4. Wrestling mat.
5. Wrestling dummy.

2.4 Research Variables

After reviewing various scientific sources and consulting with wrestling coaches and motor learning specialists, the independent variable was identified as the educational program designed according to the autonomy-based approach. This method, considered modern in learning, relies on learners' ability to make independent decisions regarding their learning, from setting goals to determining content, selecting appropriate methods, and monitoring progress.

The dependent variable was defined as the acquisition of selected Greco-Roman wrestling holds, chosen according to their relative importance as determined by expert evaluation. The holds that scored 75% or above were selected: lift hold, skip hold, and arm pull hold.

2.5 Research Tests

The research tests were determined by presenting a set of Greco-Roman wrestling holds to experts in testing, measurement, and motor learning, in order to identify the most suitable tests for the studied sample. The tests selected were those that obtained a relative importance score of 75% or higher.

2.5.1 Test Description

The researcher conducted video recording of the studied holds, sequencing them from the most difficult to the easiest, drawing on his expertise as a wrestler familiar with all holds. A skill evaluation form (Ali Al-Tarfi, 2023) was adopted, where each skill was assessed by three judges. Wrestlers' performances were videotaped with advanced cameras from multiple angles. The videos were then distributed on CDs to the evaluators for both pre- and post-tests of the experimental and control groups.

Performance Description

The wrestler performs the wrestling holds in a manner that is clear on video to enable evaluators to score accurately. Each skill was divided into three parts:

- Preparatory phase: 3 points
- Main phase: 4 points
- Concluding phase: 3 points

2.6 Pilot Study

The pilot study was conducted on Thursday, May 15, 2025, on two wrestlers outside the research sample. The purpose was to identify potential challenges that might arise during the main experiment, to test the placement and operation of cameras, to ensure the suitability of evaluation forms, and to estimate the time required for implementing the instructional units of the educational program.

The pilot study provided the researcher with insights into the nature of the procedures, helping to identify both strengths and weaknesses, which were then addressed to optimize the main experiment.

2.7 Pre-tests

The researcher applied the cognitive style of field dependence–independence, using the *Embedded* Figures Test (model pictures), which is defined as "a style concerned with the way an individual perceives a situation or subject and its details. It examines the extent to which the individual can perceive a part of the field as independent from the surrounding context, i.e., the analytical perceptual ability." (Al-Sharqawi & Al-Khudri, 1989, p.12) [1].

The researcher agreed with Anwar Al-Sharqawi and Suleiman Al-Sheikh in selecting this cognitive style, as it aligns with the current study variables and distinguishes between individuals capable of handling elements of a situation independently (field-independent) and those unable to do so (field-dependent), i.e., wrestlers who rely solely on explanation and demonstration.

Based on this approach, the sample was divided into two groups: the experimental (autonomy-based) group (n = 10) as identified by the test results, and the control group (n = 10) selected from among the 12 wrestlers.

The pre-tests were conducted on Monday, May 19, 2025, in the wrestling hall of Al-Ezzah Sports Club. Data sheets were prepared and video-recording equipment was set up to capture performances from angles suitable for accurate evaluation by the judges.

2.7.1 Equivalence of Research Groups

The researcher ensured equivalence between the experimental and control groups using the independent samples t-test for equal group sizes in pre-tests. This procedure minimizes differences between groups, eliminates interaction factors, and provides accurate identification of the effect of the independent variable. As Dhafer Hashem (2012, p.106) explains: "The researcher conducts pre-tests, or multiple pre-tests, to ensure equivalence among groups in the studied traits prior to the influence of the independent variable."

Table (2) illustrates the random distribution of differences in pre-tests, indicating equivalence between the two groups across all variables.

Table 2: Equivalence of the research groups

No.	Variables	Unit	Experimental Group (M ± SD)	Control Group (M ± SD)	t-value	Sig.	Significance
1	Diving Hold	Score	3.044 ± 0.489	2.889 ± 0.510	0.878	0.419	Not Sig.
2	Double Arm Hold	Score	3.398 ± 0.452	3.886 ± 0.439	1.445	0.133	Not Sig.
3	Arm Pull with Both Arms	Score	4.423 ± 0.644	3.059 ± 0.989	1.456	0.123	Not Sig.

2.8 Main Experiment

The main experiment began on May 22, 2025, with the experimental group. The wrestlers were given an introductory session on the educational program and the concept of autonomy, along with guidance on following the sequential images of the studied holds. Slow-motion videos were prepared by the researcher to illustrate the three phases of each hold.

The educational program lasted for 8 weeks, with 3 instructional sessions per week (Sunday–Tuesday–Thursday), totaling 24 sessions. The three selected wrestling holds were allocated 8 sessions each. Every session included the three phases: preparatory, main, and concluding. Exercises were scientifically designed by the researcher, who, as a wrestler, was well-qualified to construct such training activities.

The instructional unit began with the program presentation in the preparatory stage, prior to warm-up, to prevent disruption of the cognitive processes of the junior wrestlers. The main stage emphasized repetition to build the motor program of each skill, with immediate feedback provided during performance. The control group, however, continued with the traditional method employed by the coach, consisting of direct demonstration and explanation.

2.9 Post-tests

Post-tests of the studied holds were conducted on July 17, 2025, under the same conditions as the pre-tests, for both experimental and control groups.

2.10 Statistical Methods

The statistical package SPSS was used, applying the following formulas:

1. Mean.
2. Median.
3. Skewness coefficient.
4. Standard deviation.
5. Independent samples t-test.
6. Paired samples t-test.

3. Presentation, Analysis, and Discussion of Results

The data obtained from the pre- and post-tests of both research groups were processed in light of the results achieved. To verify the validity of the hypotheses, the data were analyzed statistically as follows:

3.1.1 Presentation and Analysis of the Pre- and Post-Test Results of the Experimental Group

Table 3: Arithmetic means, standard deviations, calculated (t) value, error ratio, and significance level of the pre- and post-tests of the experimental group

Variables	Unit	Pre-test (M±SD)	Post-test (M±SD)	Mean Difference	t-value	Sig.	Significance
Diving hold	Degree	5.52 ± 0.483	7.212 ± 0.228	1.692	8.124	0.003	Significant
Double-arm hold	Degree	3.222 ± 0.483	5.821 ± 0.289	2.599	10.271	0.001	Significant
Arm-pull hold	Degree	4.28 ± 0.629	6.141 ± 0.353	1.861	8.415	0.001	Significant

Significant at ≤ 0.05

3.1.2 Discussion of the Pre- and Post-Test Results of the Experimental Group

The data in Table (3) reveal statistically significant differences between the pre- and post-tests of the experimental group. This improvement is attributed to the educational program designed according to the independence-based learning style, which played a major role in enhancing performance. The use of visual stimuli provided wrestlers with immediate corrective feedback, enabling them to adjust their execution and improve accuracy.

Such a program allowed wrestlers to perform techniques with greater precision, correct mechanics, and improved motor execution—factors crucial for effective skill performance. This finding aligns with Uega (1992) [14], who emphasized that "rapid movements combined with correct body technique during execution enable learners to maximize motor transfer across different body parts."

The independence-based educational program achieved its intended objectives. Wrestling novices require high levels of concentration and information processing to execute skills with accuracy and speed. The structured exercises designed by the researcher, based on scientific principles, helped enhance technical execution. Furthermore, the slow-motion video demonstrations highlighted the preparatory, main, and final phases of each hold, which facilitated understanding and execution.

These results also confirm the role of model demonstrations in skill acquisition, as learners could observe and imitate the performance model. This is supported by Allen & Faraj (2003) [13], who argued that "motor skills in sports cannot be effectively acquired unless they are presented realistically and reinforced through visual observation and practical application."

The researcher also noted that the independence-based approach encouraged learners to take responsibility for their own performance, aligning with Khayoon (2002) [12], who suggested that effective models enable learners to mentally simulate skills and reduce errors by recalling the correct execution.

Additionally, the integration of visual materials in the program enhanced memory processes—particularly retrieval and discrimination memory—which are essential for rapid skill execution (Al-Dulaimi, 2009). As Schmidt & Wrisberg (2004) noted, slow-motion demonstrations strengthen motor control and movement stability, provided that learners gradually transition to normal speed to avoid forming maladaptive habits.

From these results, the first hypothesis is confirmed.

3.2 Presentation and Analysis of the Pre- and Post-Test Results of the Control Group

Table 4: Arithmetic means, standard deviations, calculated (t) value, error ratio, and significance level of the pre- and post-tests of the control group

Variables	Unit	Pre-test (M±SD)	Post-test (M±SD)	Mean Difference	t-value	Sig.	Significance
Diving hold	Degree	3.75 ± 0.762	5.52 ± 0.401	1.77	4.289	0.003	Significant
Double-arm hold	Degree	2.320 ± 1.770	4.742 ± 0.641	2.422	7.322	0.002	Significant
Arm-pull hold	Degree	3.024 ± 0.823	5.112 ± 0.523	2.088	6.013	0.002	Significant

Significant at ≤ 0.05

3.2.1 Discussion of the Pre- and Post-Test Results of the Control Group: Table (4) indicates significant differences between the pre- and post-tests of the control group. These improvements are attributed to the traditional teaching method applied by the coach, which relied mainly on explanation, demonstration, and repetition. Although this

method led to some progress, it lacked the visual support elements provided in the experimental program.

The researcher emphasizes that the absence of visual aids limited the learners' ability to develop internal feedback mechanisms essential for correcting performance. As Schmidt (2000) highlighted, "feedback enhances motivation, reinforces correct performance, and reduces errors."

While the control group showed some improvement due to repeated practice and adherence to training units, their progress was less pronounced compared to the experimental group. This confirms the importance of integrating visual and cognitive strategies in skill learning.

Thus, the second hypothesis is confirmed.

3.3 Presentation and Analysis of Post-Test Results between the Experimental and Control Groups

Table 5: Arithmetic means, standard deviations, calculated (t) value, error ratio, and significance level of the post-tests for both groups

Variables	Unit	Experimental Group (M±SD)	Control Group (M±SD)	t-value	Sig.	Significance
Diving hold	Degree	7.212 ± 0.228	5.52 ± 0.401	4.58	0.00	Significant
Double-arm hold	Degree	5.821 ± 0.289	4.742 ± 0.641	5.023	0.00	Significant
Arm-pull hold	Degree	6.141 ± 0.353	5.112 ± 0.523	5.472	0.01	Significant

3.3.1 Discussion of Post-Test Results between the Experimental and Control Groups

The data in Table (5) show significant differences in favor of the experimental group. This improvement is attributed to the effectiveness of the independence-based educational program, which engaged learners actively in decision-making and skill execution.

The exercises included within the program provided variety, progression, and appropriate sequencing, which fostered motor intelligence—a crucial factor in wrestling skill acquisition. This aligns with Homs & Abdul-Latif (2013), who noted that learners with high bodily-kinesthetic intelligence are more adept at solving problems and creating new strategies in performance contexts.

Moreover, the program facilitated the development of motor programs through repeated practice, corrective feedback, and visual demonstrations. Khayoon (2010) [11] confirmed that slow-motion performance combined with visual monitoring allows learners to regulate movement effectively and correct errors in real-time.

While the control group showed improvement due to consistent practice and traditional instruction, the experimental group outperformed them significantly due to the structured, visually supported, and independence-based approach.

Thus, the third hypothesis is confirmed.

4. Conclusion and Recommendations

4.1 Conclusion

1. The independence-based educational program had a significant impact on enhancing wrestlers' cognitive flexibility and problem-solving abilities in skill performance.
2. The independence style improved the learning process, making it more interactive, coordinated, and effective in wrestling skill acquisition.
3. Presenting skills through visual aids, particularly in slow motion, facilitated learning by enabling learners to perceive and analyze fine movement details more effectively.

4.2 Recommendations

1. Incorporate visual stimuli as an integral part of skill learning, as they provide positive outcomes.
2. Design comprehensive educational programs that directly enhance learners' technical performance.
3. Apply the independence-based learning style across different skills and sporting activities to further validate its effectiveness.

References

1. Al-Sharqawi A, Al-Khudri S. The Embedded Figures Test – Group Form – Instruction Manual. 4th ed. Cairo: Anglo Egyptian Bookshop; 1989.
2. Al-Sayyid AL. A study of autonomy among children with hearing impairment and normal children [Master's thesis]. Cairo: Ain Shams University, Institute of Childhood Studies; 2011.
3. Al-Tarfi AS. The scientific encyclopedia of wrestling. 1st ed. Baghdad: Center of Sciences Office; 2023.
4. Al-Kadhimi DH. The interleaved teaching style and its impact on learning and development through spatial organizational options in tennis learning environments [dissertation]. Baghdad: University of Baghdad, College of Physical Education; 2002.
5. Al-Kadhimi DH. Practical applications in writing educational and psychological theses and dissertations (planning and design). Baghdad: University of Baghdad, College of Physical Education; 2012.
6. Darwish MM, Saad AL. Teaching methods in physical education and multiple intelligences. Alexandria: Dar Al-Wafaa Publishing; 2013.
7. Al-Dulaimi NAZ. Methods in motor learning. Babylon: University of Babylon, College of Physical Education; 2009.
8. Mohammed EAR. The effectiveness of plyometric training on vertical jump distance and its impact on the spike as well as some physical abilities in volleyball. Scientific Journal of Physical Education and Sport. 1997;(12).
9. Mahjoub W. Scientific construction (measurement – learning behavior and control systems). Cairo: Egyptian Book Organization; 2014.
10. Salah W, Youssef S. Motor learning and its applications in physical and sports education. Beirut: Dar Al-Kutub Al-Ilmiyya; 2014.
11. Khayoon Y. Motor learning: Between principle and practice. 2nd ed. Baghdad: Al-Kalima Al-Tayyiba Printing Press; 2010.
12. Khayoon Y. Motor learning: Between principle and practice. Baghdad: Al-Sakhra Printing Office; 2002.
13. Faraj AW. Experiences in games for children and adults. 2nd ed. Alexandria: Al-Maaref Publishing House; 2003.
14. Uega K. The men's throwing. New Studies in Athletics. 1992;7:57.

15. Schmidt RA, Wrisberg CA. Motor learning and performance. Champaign, IL: Human Kinetics; 2004.
16. Schmidt RA, Wrisberg CA. Motor learning and performance. 2nd ed. Champaign, IL: Human Kinetics; 2000.