
The Impact of Representational Systems on Improving Snatch Performance for Some First-Stage Students in The College of Physical Education and Sports Sciences - Mustansiriya University in Weightlifting

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Abstract: The objective of the project is to develop targeted exercises based on representational systems to improve snatch performance among first-stage morning students at the College of Physical Education and Sports Sciences - Mustansiriya University. The study aims to analyze the effects of these specific activities, which target the visual, auditory, and sensory systems, on first-year morning students at the College of Physical Education and Sports Sciences - Mustansiriya University.

The researcher employed an experimental methodology, incorporating both controlled and experimental groups, as it is considered more efficacious in acquiring dependable knowledge. A total of 60 individuals were selected from the first-stage morning students at the College of Physical Education and Sports Sciences - Mustansiriya University. The sampling method utilized was purposive, with the students being distributed randomly, resulting in a total of 20 individuals. The participants were categorized into two distinct groups: the experimental group, consisting of 10 students, and the control group, which likewise had 10 students.

The results suggest that the targeted workouts, which were designed according to representational systems, had a noticeable effect by greatly improving the skill performance of the experimental group. These exercises successfully reduced boredom, enhanced engagement, and generated excitement by aligning with the learner's representational system. The study suggests incorporating representational systems into the design of educational and developmental activities. It also advises employing gadgets and techniques that are compatible with learners' cognitive abilities in weightlifting.

Keywords: Representational Systems, Snatch Performance, Weightlifting

Introduction

Introduction and Importance of the Research:

Weightlifting is among the individual sports featured in the Olympic Games. It has significantly evolved in recent years, reaching today's technical performance approved by the International Weightlifting Federation in snatch and clean and jerk techniques. Athletes have practiced these techniques using various teaching and training methods aimed at achieving technical levels in these lifts that keep pace with the latest advancements. The goal is to enhance and elevate the performance of these skills efficiently, reducing effort and achieving high-level accomplishments.

Hence, scientific research has focused on studying the best means and methods to achieve educational efficiency, particularly in terms of time optimization, effort reduction, or

minimizing errors related to the educational material. One of these methods involves utilizing superior teaching methods that effectively reduce skill-based errors and expedite learning. Scientific advancements worldwide have significantly contributed to elevating the level of athletes practicing this sport. The advancements in theoretical and scientific knowledge play an active role, and it's crucial for coaches to harness and apply these advancements to advance the sport and achieve the high standards witnessed today.

Snatch, one of the significant lifts in weightlifting, holds particular importance as its success not only contributes within the competitions but also provides a morale boost for weightlifters to succeed in other lifts. Mastering this lift demands a high level of learning and performance control. Observing numerous local Iraqi championships in this sport, the researcher noticed that most coaches and instructors train beginners and weightlifters in performing the snatch using a traditional teaching method, neglecting the learner's representational system.

Hence, the research's importance lies in understanding training using specialized exercises based on representational systems and their impact on teaching snatch to novice weightlifters to enhance and develop this skill.

Research Problem:

Representational systems are modern educational aspects. However, many coaches and instructors predominantly rely on one representational system, the sensory system, during the process of teaching weightlifting skills. They tend to neglect other representational systems despite their significance. Particularly, integrating these systems in the educational process facilitates effort reduction, time-saving, and expedites the learning of technical skills in weightlifting.

As a former player and a current follower of most weightlifting championships in Iraq, the researcher has observed that educational curricula often overlook visual, auditory, and sensory representational systems. This oversight results in cognitive confusion and disrupts information processing for learners, affecting their perception in learning the snatch skill.

Therefore, the researcher aims to utilize visual, auditory, and sensory representational systems due to their underutilization in educational curricula. The objective is to prevent cognitive confusion, enhance information processing, and improve learners' grasp of the snatch skill. The ultimate goal is to find the best approach for learners, considering their representational system.

Research Objectives:

1. Developing specialized exercises based on representational systems to enhance snatch performance for first-stage students in the College of Physical Education and Sports Sciences - Mustansiriya University.

2. Understanding the impact of specialized exercises aligned with the three representational systems (visual, auditory, and sensory) on first-stage morning students at the College of Physical Education and Sports Sciences - Mustansiriya University.

Research Hypotheses:

1. There are statistically significant differences between pre-test and post-test assessments in improving snatch performance based on representational systems for both the experimental and control research groups.

2. There are statistically significant differences in post-test assessments regarding the enhancement of snatch performance based on representational systems between the

experimental and control research groups, favoring the experimental group in the research sample.

Areas of Research:

1-Human Scope: A sample of first-stage students from the College of Physical Education and Sports Sciences - Mustansiriyah University, totaling 20 students.

2-Time Scope: From 20/11/21.

3-Spatial Scope: Weightlifting hall at the College of Physical Education and Sports Sciences - Mustansiriyah University.

2-1 Research Methodology:

The researcher employed an experimental approach using the controlled and experimental group method, considering it as one of the most effective means to attain reliable knowledge.

2-2 Research Population and Sample:

The sample was selected from first-stage morning students at the College of Physical Education and Sports Sciences - Mustansiriyah University, with a total research population of 60 students. The research sample was deliberately chosen and randomly distributed, consisting of 10 students. The second group represented the control group, also comprising 10 students.

2-3 Sample Equivalence:

Table (1)

Illustrating the Equivalence of Experiment Participants

"Measured Category"	"Variance"	"The calculated value"	"The tabulated value"	"The significance"
"Accomplishment"	1.55	0.072	19.42	"Non-significant"

The source is researcher-generated.

2-4 Data Collection Methods, Tools, and Equipment:

Arabic and foreign sources, the internet, registration forms, expert opinions and specialists, assistant work team.

4- 2-1 Tools and Equipment:

Electronic calculator (laptop type), camera, stopwatch, datasheet, weightlifting barbell.

5-2 Field Tests:

5-2-1 Skill Test:

The test is conducted using a weightlifting barbell:

The subject stands on the lifting platform, and upon the judge's signal to start, the subject performs the snatch lift. They then hold the weight while standing, awaiting the judge's signal to lower the weight. After the judge's signal, the subject lowers the weight. Each subject is given three attempts, and the best attempt is recorded.

5-2-3 Pilot Experiment:

The researcher conducted the pilot experiment on Sunday, November 18, 2018, at 4:00 PM. It involved 5 students from outside the primary research sample. The purpose was to identify any potential drawbacks that might arise in the main experiment to mitigate them. Additionally, it aimed to familiarize the assistant work team, train them to face and overcome challenges, understand the time required for executing tests, exercises, and other activities

during the main experiment.

2-5-3 Pre-Tests:

The pre-tests were conducted on Monday, November 19, 2018, at 4:00 PM in the weightlifting hall at the College of Physical Education - Mustansiriyah University, using a Sony camera. Upon completion of filming the tests, the researcher transferred the recordings onto a CD and distributed them to the assessors responsible for grading the research sample's tests.

5-2-4 Main Experiment:

The main experiment was implemented on the research sample on Tuesday, November 20, 2018. The researcher prepared specialized exercises based on representational systems specifically designed by the researcher for the experimental group. These exercises consisted of 24 instructional units, scheduled at a rate of 3 units per week, each unit lasting 60 minutes. The instructional units were distributed across 8 weeks.

After reviewing scientific sources and consulting with experts, the researcher utilized exercises in the instructional units and formulated the content to be implemented on the experimental group based on representational systems. The researcher specified the number of instructional units for the research group and the exercise sequences within each unit. Each instructional unit was divided as follows:

10 minutes: Preparatory section including warm-ups and specific warm-ups.

45 minutes Instructional + Practical Part: Specialized exercises based on representational systems, including presentation, explanation, and application of the skill.

5 minutes Conclusion: Cool-down exercises.

2-5-6 Post-Tests:

The post-tests were conducted at 4:00 PM on Monday, November 21, 2019. The researcher ensured the same conditions as the pre-tests.

2-6 Statistical Methods:

The researcher used the SPSS software package for statistical analysis, employing measures like mean, standard deviation, Pearson correlation coefficient, and the t-test.

Presentation, Analysis, and Discussion of Results

Table (2) illustrates the means, standard deviations, calculated t-values, and tabulated t-values for the performance test using the weightlifting barbell.

"The group"	"The pre-test"		"The post-test"		The calculated t-value	The tabulated t-value	"The significance"
	S	F	S	F			
"The control group"	5	1,03	6	2,51	2,25	2,03	"Statistically significant"
"The experimental group"	4	1,91	8	1,82	3,07	2,03	"Statistically significant"

Degree of freedom (9) and below the significance level (0.05).

From Table (2), the results of both pre-test and post-test performance using the weightlifting bar for the experimental group 1 showed a mean of 5.00 and a standard deviation of 1.03 for the pre-test, and a mean of 6.00 and a standard deviation of 2.51 for the post-test. The calculated t-value was 2.25 at a significance level of 0.05, with 9 degrees of freedom. It was found to be greater than the tabulated t-value of 2.03, indicating a significant

difference favoring the post-test under the degrees of freedom (9) and a significance level of (0.05). This suggests a significant improvement in the post-test.

For the second group, the pre-test showed a mean of 4.00 and a standard deviation of 1.91, while the post-test displayed a mean of 8.00 and a standard deviation of 1.82. The calculated t-value was 3.07 at a significance level of 0.05, with 9 degrees of freedom, surpassing the tabulated t-value of 2.03. This also signifies a significant difference favoring the post-test.

The results from **Table (2)** presenting the pre-test and post-test outcomes for the experimental and control research samples indicate significant statistical differences in favor of the post-test for the experimental group. This suggests the effectiveness of the exercises in enhancing and developing the skill, where the specialized exercises, based on representational systems for learners, contributed significantly to the learners' substantial progress. This development led to a genuine sense of capability among the learners, allowing them to interact distinctly with the exercises incorporated into the practical curriculum and to engage highly with the assisting team.

Conversely, the control research group that followed the traditional method without the use of representational systems showed less effectiveness in skill development, as indicated by the contrasting results. These findings align with various studies and research, such as the study by Ashraf Mohamed Ali (1992), which affirmed that "mastery of using educational resources contributes to enhancing educational and training processes, ultimately contributing to teaching motor skills."⁽¹⁾

4- Conclusions and Recommendations:

4-1 Conclusions:

1- Special exercises based on representational systems had a clear impact, enabling the experimental group to significantly improve and develop their skill performance.

2- The exercises used effectively helped in avoiding monotony, increasing excitement, and stimulating interest due to their alignment with the learner's representational system.

4-2 Recommendations:

1- Consideration should be given to employing representational systems for learners when designing educational exercises for technical skill acquisition.

2- Benefit from these exercises to enhance and improve the skill of weightlifting snatch.

3- Develop educational and developmental curricula and implement them for learners using devices and tools that align with the cognitive capabilities of weightlifting players.

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¹ Ashraf Mohamed Ali. "The Impact of Using Some Educational Tools (of Different Sizes) on Developing Some Fundamental Skills Related to Special Agility for Football Players." *Sciences and Arts Magazine - Studies and Research*, vol. 4, no. 1, January, Helwan University, 1992, p. 62.

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