



## The impact of using the seven-cycle learning strategy (ES-7) on the development of cognitive achievement among students in rhythmic gymnastics

M. Mays Abdali Jassim Rumi <sup>1</sup>

M. Sura Sattar Jabbar <sup>2</sup>

maysmaysmuntadher@gmail.com

### Abstract

#### ARTICLE INFO

Received: Nov 2,2024

#### Keywords

- effectiveness of  
-the cognitive achievement -  
rhythmic gymnastics

#### Corresponding Author :

maysmaysmuntadher@gmail  
.com

This study aimed to investigate the impact of using the seven-cycle learning strategy (ES.7) in improving the cognitive achievement of third-grade students in the subject of rhythmic gymnastics in the faculties of physical education and sports sciences.

The researcher relied on the experimental approach by designing two groups with pre-test and post-test, where a sample of 20 female students out of 40 students representing the research community was selected, they were distributed into two groups. The researcher conducted pre-tests, then applied the ES.7 strategies through specially prepared learning modules, then conducted post-tests to find out the impact of the strategy.

The results of the study showed the effectiveness of the seven-cycle learning strategy (ES.7) in enhancing the cognitive achievement of students in rhythmic gymnastics. The researcher recommends using the ES.7 strategy in teaching other subjects and for various age groups to enhance the learning process and develop cognitive achievement in different areas.

## 1-The importance of research:

### 1.1 Introduction:

The quality of education and the development of its strategies are among the most important factors for the success of the educational process and the achievement of the desired goals. The effective teaching process requires the employment of modern teaching tools and methods that suit the needs of students and help them acquire knowledge in a deeper and more interactive manner. To achieve this goal, several instructional strategies have emerged based on the principles of constructivist theory which support the idea that learning is a constructivist process in which the learner forms his own understanding of knowledge through his interaction with the educational environment. Among these strategies, we find the multi-stage learning cycle strategy, which has evolved from the three-cycle, to the four-cycle, to the five-cycle, to the seven-cycle (ES.7), which is the focus of this study.

**The seven-cycle learning strategy (ES.7)** relies on arranging and organizing instruction in sequential and deliberate steps that allow students to explore and understand knowledge in depth. This strategy promotes what is called “meaningful learning,” it enables the student to link new information with previous knowledge stored by him. It contributes to building an integrated and renewed knowledge structure. According to Piaget's theory, this strategy is based on three main stages: representation, where the learner interacts with new information; alignment, where he or she adjusts the information he or she has to conform to the new knowledge; and organization, where the information is arranged in a new structure commensurate with the learner's cognitive development.

On the other hand, cognitive achievement is a measure of the quality of knowledge acquired by the learner whether theoretical or practical. It reflects the extent which the learner understands the concepts and is able to apply them in different situations. This achievement can be measured by the extent which the learner responds to the questions directed to him and interacts with the concepts presented during teaching. In the field of rhythmic gymnastics, cognitive attainment is particularly important, as the sport requires the ability to learn and master specific motor techniques that require complete harmony between physical abilities and theoretical knowledge. Rhythmic

gymnastics is a sport often reserved for females, as it suits the nature of their bodies and their ability to aesthetic motor expression, aims to develop aspects of balance, motor coordination, and muscle compatibility.

Therefore, the importance of this study comes from the focus on exploring the effectiveness of the seven-cycle learning strategy (ES.7) in improving the cognitive achievement of female students in the field of rhythmic gymnastics. This strategy is expected to allow students to better understand the necessary motor techniques, and increase their ability to control subtle and complex movements, ultimately raising their academic and athletic performance. This study is of great benefit to physical education teachers who seek to adopt modern and effective teaching strategies, and can provide them with an integrated vision of how to apply the seven-cycle learning strategy in other sports fields and different age groups to achieve better learning and distinguished cognitive achievement.

### **Research problem:**

The researcher identified the research problem after observing the practical performance of the students in the rhythmic gymnastics, this disparity in performance may be due to the lack of use of modern educational strategies. Therefore, the researcher tried to identify the extent to which the seven-cycle learning strategy (ES.7) achieved an improvement in cognitive achievement in the rhythmic gymnastics game. The effectiveness of ES.7: By measuring the impact of this strategy on the level of cognitive achievement of students.

### **Research objectives:**

1. **Recognize the impact of the seven-cycle learning strategy (ES.7)** in improving cognitive achievement when practicing rhythmic gymnastics.
2. Building a cognitive achievement test in the rhythmic gymnastics for students of the third stage in the Faculty of Physical Education and Sports Sciences/ University of Maysan.
3. Preparing teaching modules for rhythmic gymnastics according to **the seven-cycle learning strategy (ES.7)**.

#### **1-4 Research Assumption:**

1. There are statistically significant differences in the cognitive achievement test between the pre and post-tests of the experimental research group, in favor of the post-test.

#### **Research fields**

**1-5-1 Human field:** Female students of the third stage at the University of Maysan/ Faculty of Physical Education and Sports Sciences.

**1-5-2 Time Range:** 25/10/2023 to 10/4/2024.

**1-5-3 Spatial scope:** The closed hall of the rhythmic gymnastics.

#### **Identifying terms**

It is a teaching strategy concerned with teaching based on the use of steps in building knowledge and the steps of using them in a sequence and organization of these steps through the process of inquiry to reach knowledge and a way that suits how students learn and during which a theory of purity is applied. It consists of the stages of representation, adaptation and organization (12:1)

#### **2- Research Methodology and Field Procedures:**

##### **3-1 Research Methodology**

The researcher used the experimental approach because it is best suited to the nature of the experimental study, where all influencing factors are adjusted with the exception of one factor to measure its impact. It adopted the method of the two groups with pre and post-tests, both groups are tested before and after applying the independent variable to one of them to observe its effect.

##### **2.2 Research Community and Sample:**

The researcher chose the research community in a deliberate way, as the research community was composed of 40 female students of the third stage/ Faculty of Physical Education and Sports Sciences / University of Maysan. The research sample was selected using the random method of the lottery method, as it represents 50% of the members of the indigenous community, and their number reached (20) students,

divided into (10)students in the experimental group and (10) students in the control group.

## **2-3 Devices, tools and means used in the research:**

### **2-3-1 Devices and tools used in the research:**

- Dell Laptop 1pc
- 1 Suny Calculator
- class room software
- Auxiliary staff.

### **2-3-2 Means used in the research:**

- Arab and foreign references and sources.
- International Internet.
- Observation and Interviews
- Cognitive Achievement Questionnaire Form

## **2-4 Field Research Procedures:**

### **2 -4-1 Steps to prepare the cognitive achievement test for the rhythmic gymnastics for the third stage:**

#### **2-4-1-1 Determining the objective and scientific material of the test:**

The research aims to develop a cognitive attainment test to measure certain skills in rhythmic gymnastics. This test helps to assess the extent to which students acquire the theoretical and practical knowledge and skills associated with this sport, then determine the scientific material for the research topics of the subject of rhythmic gymnastics from the vocabulary of the textbook (rhythmic gymnastics) for students of the third stage/ departments and colleges of physical education, which is authored by) Amira Abdel Wahed , Shaimaa Abdel Matar(214:3).

#### **2-4-1-2 Formulating the paragraphs of the cognitive achievement test:**

To determine the validity of the cognitive test paragraphs, the researcher presented the initial version of the test, included 25 paragraphs divided into three axes: historical, legal, and skill. The paragraphs were presented to

supervisors and experts in different fields (testing and measurement, psychology, teaching methods, and rhythmic gymnastics) to ensure their appropriateness and effectiveness in measuring the desired goal. After evaluating the validity of the paragraphs using the K2 test as a criterion for acceptance, all the paragraphs were retained leaving 25 final paragraphs.

#### **2-4-1-3 Preparation of test instructions:**

To complete the preparation of the cognitive test, the researcher experimented initially on 10 female students / the third stage/ the Faculty of Physical Education and Sports Sciences/ University of Maysan, with instructions to ensure that they understood the answer method and the specified time. The instructions were as follows:

1. Write the name, division, and university on the answer sheet.
2. Choose the correct answer from four options for each question.
3. Answer all questions without the help of colleagues.
4. The test duration is 15 minutes.
5. Leave no question unanswered.

#### **2-4-2 The exploratory experiment to test knowledge achievement:**

To ensure the clarity of the test paragraphs for the female students, the researcher conducted a survey experiment after determining the final paragraphs of the test, which amounted to 25 paragraphs, on a sample of 10 female students on Wednesday 1/11/2023. Next, the researcher collected the sample data and arranged them in tables for statistical analysis.

### **Pre-training tests**

Prior to the tests, the researcher provided an electronic introductory module for the students of rhythmic gymnastics, to introduce them the basics of the curriculum. She then performed two pre-tests on the research sample:

1. The first test of cognitive achievement, covered the vocabulary of the curriculum scheduled for the third stage, was conducted on Sunday 5/11/2023.

## 2.6 Key Experience:

The researcher designed the educational modules using **the seven-cycle learning strategy (ES.7)** in electronic form. So that they include **seven stages** that suit the topic of the research and its sample. The modules were divided into **8 modules** dealing with the syllabus vocabulary, ensuring a comprehensive and integrated organization to support the learning process.

The following is a breakdown of the eight modules developed by the researcher to teach the skills of rhythmic gymnastics using the ball:

1. **Module 1:** A review of some of the vocabulary of the first course.
2. **Module 2:** Introduction to the ball instrument, its history and specifications.
3. **Module 3:** How to catch and chop a ball.
4. **Module 4:** Rolling the ball on the ground and body.
5. **Module 5:** Throwing and receiving the ball.
6. **Module 6:** Performing circle movements using the ball.
7. **Module 7:** Different Types of Ball Oscillators.
8. **Module 8:** Drawing a figure 8 with the ball and connecting a set of movements of the rhythmic gymnastics using the ball.

The researcher adopted the design of the educational units according to the seven-cycle learning strategy (ES-7), the units were applied to the research group starting on Monday 12/11/202 3, at the rate of one educational unit per week, the application ended on Wednesday 12/1/202 4 under the supervision of the subject teacher specialized in rhythmic gymnastics.

The time allocated for each educational unit is 90 minutes distributed as follows:

Preparatory section (20 minutes): includes the administrative side and the introduction aims to stimulate the students' interest in the subject.

Main section (60 minutes): Includes the seven stages of the strategy (excitement, exploration, interpretation, expansion, extension, exchange).

Closing section (10 minutes): Includes the evaluation phase to assess the students' understanding of the skill.

The content was organized around the rhythmic gymnastics subject prescribed for the third stage, adapted within the framework of the ES-7 strategy, to teach 8 learning modules specific to each skill.

### **Post-test**

The researcher conducted the post-tests of both the cognitive achievement test and the measure of the trend towards practicing rhythmic gymnastics for the students of the third stage at the Faculty of Physical Education and Sports Sciences/University of Maysan on 18/1/2024 in order to assess the impact of the seven-cycle learning strategy after the end of the educational program.

The researcher was keen to use the same tools, circumstances, time, and place where the pre-test was carried out, in addition to the presence of the same assistant staff, to ensure the accuracy and credibility of the results.

### **2-8 Statistical means:**

The research results were extracted using spss system which is a powerful statistical software that is widely used for data analysis in scientific research.

### **3-Presentation, analysis and discussion of the results:**

#### **3-1 Presenting, analyzing and discussing the results of the cognitive achievement tests of the research sample members:**

##### **3-1-1 Presenting, analyzing and discussing the results of pre and post tests to test knowledge achievement:**

Table (1)

Shows the arithmetic media, standard deviations, and the value of (t) calculated to indicate between the pre and post tests of the cognitive achievement of the individuals of the research sample

Variables	Pre-assessment		Post-assessment		PRS	BRB.	T Value	Sig	Indication
	H	ali	H	ali					
Cognitive Achievement	94	3,35	22,50	0,92	3,55	2,97	228	0,00	corporate



Significant when (Sig 0.05), degree of freedom ( $n - 1 =$ )  $18 - 1 = 17$  , level of significance 0.05

The researcher analyzed the results of the pre- and post-tests of the research sample to test cognitive achievement to know the achievement rate of the students after applying the seven-cycle learning strategy (ES.7). These results indicate that the pre-test was the arithmetic mean (18,94) the standard deviation (3.35) the post-test was the arithmetic mean (22,50) and the standard deviation (0,92) and the value of (T) calculated (2,228) and the value of (Sig) is (0,00) which is less than (0,05)

These results indicate a moral difference between the pre-tests and post-tests, in favor of the post-test, which indicates an improvement in the cognitive achievement of female students.

### **3-2 Discussing the results of cognitive achievement tests:**

Table (1) data indicate that there is a significant moral difference in favor of the post-test, and the researcher suggests this difference to use the seven-cycle learning strategy (ES.7). This strategy is effective because it is based on seven stages, as it helps to build learner knowledge through their active interaction with the classroom environment.

The strategy is based on Piaget's constructivist theory, where knowledge is built on the effectiveness of the individual learner and their interaction with the learning environment. The role of the teacher here is to guide the students towards the concepts they should discover, the stages of the strategy overlap to support each other, which facilitates the transfer of knowledge. (A/56/11

The researcher believes that the remarkable development in the level of cognitive achievement is due to the appropriate design of the educational units according to the seven-cycle learning strategy during e-learning. According to Hanna and Abdul Redha (1990), cognitive attainment is defined as “the amount of educational goals achieved by the learner” in a given subject (118:4).

The researcher also points out that teaching using this strategy in the electronic classroom is better and more effective than traditional methods, as it contributes to:

- Developing students' thinking.
- Increase their effectiveness in expressing their opinions.
- Raising the level of teacher professionalism in addressing educational problems.
- Promote the use of higher mental processes commensurate with students' abilities.

In general, this strategy contributes to improving the learning process and positive student interaction.

The researcher attributes the observed differences in cognitive achievement to the use of educational units according to the seven-cycle learning strategy (ES.7), as this strategy contributed to making the learning process more effective and positive. Each learning unit includes work stages that include:

1. Sensationalism
2. Explore
3. Tafseer (Interpretation)
4. Board Expansion
5. Exchange
6. EXTENSION
7. Assessment

These stages helped to employ a variety of exercises appropriate to each stage, which led to positive participation of students that greatly affected the recall and retention of information, thus making better use of it.

Positive interaction between learners and their peers, as well as between learners and the skill and teacher technique, also increased the learner's motivation towards the skill. The researcher notes that knowledge is actively built up by the learners themselves, as they integrate with new information and experiences, and receive feedback, making learning meaningful to them.

In this context, **Youssef Qatami** asserts that learning according to this philosophy is a “continuous and active construction process” that requires mental effort, in which the individual builds his knowledge of himself, modifies his ideas or adds new information to them.

## Conclusion and recommendations

### 4.1 Conclusion

1. The strategy has proven effective in improving students' cognitive achievement in rhythmic gymnastics.
2. The Cognitive Achievement Scale prepared by the researcher showed remarkable effectiveness in evaluating the knowledge acquired in this field.
3. Use of the learning platform: There was a clear effectiveness in the application of the learning cycle strategy (ES.7) through the learning platform (Class Room), which contributed to enhancing the learning experience.
4. Organizing the learning stages: The good organization of the stages of the learning cycle (ES.7) and their effective application in the various sections of the lesson, helped to better achieve the objectives of education.
5. The educational modules prepared by the researcher were effective when used systematically on the educational platform, which helped to adhere to the steps of the strategy systematically.

### 4.2 Recommendations

1. The researcher recommends that this strategy should be used in other studies and events, and in different age groups, to expand its educational benefits.
2. It is important to organize lectures, seminars and workshops that highlight the importance of exercising in general, and especially Gymnastics, to promote sports awareness among students and society.
3. The researcher recommends taking advantage of the **Rhythmic Gymnastics Trend Scale** that she has built, to research students' attitudes towards this game and guide educational programs based on its results.

4. The researcher stressed the importance of conducting similar studies according to the learning course strategy in the field of gymnastics, especially for students of the Faculty of Physical Education and Sports Sciences, to enhance understanding and interest in sports skills.

## References

- Ahmed Abdul Karim Al-Zuhairi : The effectiveness of the seven-year learning course in the achievement of fifth-grade students in literature

texts and developing their lateral thinking) Unpublished Master Thesis, Faculty of Education for the Humanities , University of

Tikrit

- Ahmed Odeh Salman : **Measurement and Evaluation in the Teaching Process**, 2nd Edition, Amman , National Press, 2000
- Amira Abdel Wahed Mounir , Shaimaa Abdel Matar : **Foundations of Learning Rhythmic Gymnastics**, 1st Edition, Dar Al-Nour Printing , Baghdad

2010

- Hanna Aziz and Abdul Reda Anwar : Educational Research Methods, Baghdad , Dar Al-Hikma for Printing and Publishing , 1990
- Zakaria Mohammed Al-Zaher (et al.):**Principles of Measurement and Evaluation in Education**, Dar Al-Thaqafa wa Al-Nashr Library, Amman

1999

- Abdel Rahman Mohamed Issawi : Experimental Measurement in Psychology and Education , Cairo , Dar Al-Maaref University ,

1985

- Vandalin , Duopold . C. **Research Methods in Education and Psychology**: Translated by ( Mohammed Nabil Nawfal) and others: Cairo

, Arab Register Press, 1977

- Kamal Abdel Hamid and Mohamed Sobhi Hassanein : **Fitness and its components , theoretical foundations, physical preparation, measurement methods**

Cairo: Dar Al-Fikr Al-Arabi.

- Laila Sayed Farhan : **Mathematical Cognitive Measurement**, 1st Edition, Cairo , Al-Kitab Publishing Center, 2001
- Mohamed Sobhi Hassanein : **Measurement and Evaluation in Physical Education**, Cairo , Dar Al-Fikr Al-Arabi , 1995
- Nawal Naji Razouki : The effectiveness of using the two-sided brain learning strategy in teaching science to develop some

The habits of the productive mind followed according to brain control in learning the simple attack skills of female students in fencing

Master's thesis , ( published) , Faculty of Education , Islamic University - Gaza .

- Wajih Mahjoub: **Methods and Methods of Scientific Research**, Baghdad, Dar Al-Kutub for Printing and Publishing , 2002 .p. 97 .
- Youssef Kattami . Education and Cognitive Education Strategies. Amman, Dar Al Masirah for Publishing and Distribution.

and Printing, 2013 .