



---

Research Article

---

## **The Effect of the Seven-course Learning Strategy (7E'S) on the Cognitive Speed and Accuracy of Defensive Performance in Volleyball for Female Students**

Haider Mahmoud Abood

*University of Babylon/College of Physical Education and Sports Sciences/Iraq*

---

### **KEY WORDS:**

Learning  
Strategy  
Cognitive

**Abstract:** The study aimed to develop educational units based on the seven-year learning cycle curriculum and evaluate their the impact on cognitive speed and accuracy of defensive performance is a significant factor to consider. among female students participating in volleyball. Volleyball is a difficult sport with complex movements and skills and it is included in physical education curricula. To ensure effective skill acquisition and mastery, teachers must use modern strategies, such as the seven-cycle learning approach, which aligns with the defensive skills required for successful learning. Cognitive speed, an important mental aspect in all sports, including volleyball, plays an important role in enabling learners to execute precise skills that meet criteria for optimal performance. To be consistent with the research procedures, an experimental design using the experimental approach was used. 2021-2022 academic year, research sample selected from the community Proportion of female third-year students at universities of physical education and exercise science at the University of Babylon. The sample consisted of 24 out of 30 female students. After applying the educational curriculum and applying the subsequent tests, post hoc tests were conducted. Appropriate statistical methods were used to analyze the data, which led the researcher to draw several conclusions. Among these conclusions, one of the most important results was the presence of a positive effect of the seven-year Learning loop strategies for cognitive speed and accuracy in volleyball defensive performance among female students.

---

### **Corresponding Author:**

Haider Mahmoud Abood

*University of Babylon/College of Physical Education and Sports Sciences/Iraq*

---

### **INTRODUCTION**

The remarkable progress and growth in the field of physical education can be attributed to the revelation of contemporary methods, techniques and methodologies. These discoveries had a positive impact on physical education outcomes, as learners benefitted through the introduction of a variety of teaching methods that depart

from traditional practices. One of the most effective modern strategies is the seven-cycle learning strategy, which has proven to be highly suitable for learners at all levels, especially university students. By incorporating the principles of this strategy, important educational goals can be achieved. Within the College of Physical Education programs, volleyball is among the sports

included in the curriculum. This sport presents challenges in terms of skill and movement. As teachers, it is crucial for us to use contemporary teaching methods in order to facilitate skill acquisition and guide learners toward mastery. The seven-cycle learning strategy has proven to be an effective approach in achieving this goal. A strong foundation in defensive skills is essential for successful engagement in the learning process. In addition, cognitive speed plays an important role in all sports, including volleyball, as it allows learners to execute skills accurately and to optimal performance standards<sup>[1]</sup>.

The importance of this study lies in its ability to reveal the impact of the seven-stage learning cycle strategy on the cognitive speed and accuracy of women's volleyball student's defensive performance.

**The primary objectives of this study revolve around conducting in-depth research:**

- Design educational modules based on the seven-course comprehensive learning curriculum
- The study aimed to determine the effect of applying the seven-cycle learning strategy on cognitive speed and accuracy of defensive performance on female students' volleyball abilities

**The hypothesis in question is related to the research:**

- Implementing seven-cycle learning strategy has a significant impact on women's volleyball student's cognitive speed and defensive performance accuracy

**Study approach and methodology:** To harmonize the research procedures, the researcher used the experimental method with an appropriate experimental design.

**The sample in the research community:** For the academic year 2021-2022, a group of 30 second-year female students from the College of Physical Education and Sports Sciences at the University of Babylon was selected to participate in a study. From this group, a sample of 25 female students was selected to apply the strategy, after an experimental design for one group.

**Tools and devices used in the research**

- The questionnaire
- Scientific sources
- Tests and standards

- Volleyballs (10)
- Volleyball court
- Portable Dell
- Signs
- Office supplies

**Methods used in conducting field research**

**Methods and protocols used to conduct field research:**

**Cognitive speed is assessed through a specialized test:<sup>2</sup>**

- The primary goal of the test is to evaluate cognitive processing speed
- The test was designed in a 9x9 m grid layout containing randomly placed squares marked with numbers ranging from 1-6 and these squares were clear of any obstructions. The student's task is to connect the colored and numbered cones on the starting line to their corresponding squares within the estimated time for each attempt. After completing this initial step, the student returns to the starting line to continue distributing the remaining cones among the squares

**Defensive performance accuracy tests:<sup>3</sup>**

- One way to evaluate the accuracy of transmission reception from lower levels is to perform tests
- The accuracy of the defensive wall is tested, specifically in the context of the B test
- Evaluating the accuracy of defending the field from the back-court

**Initial tests:** On 10/28/2021, the sample was organized efficiently, distributed according to the timings of the units and their names were carefully recorded in cooperation with the subject teacher to ensure a clear understanding of the test procedures.

**Educational curriculum**

**After completing the pre-tests of the research group, the researcher took the following procedures:**

- There are a total of 12 learning modules available
- The weekly assignment consists of two learning units
- The educational unit lasted a total of 90 mins
- The main section lasted for 60 mins.
- The time allocated for the practical section was 43 minutes, while the educational section was limited to only 17 mins

**Subsequent tests:** On December 22, 2021, a series of tests were conducted.

## RESULTS AND DISCUSSION

in volleyball were analyzed to compare arithmetic means and standard deviations, as shown in Table (1). In order to evaluate the importance of these differences, a t-test for correlated samples was conducted by the researcher. The results showed that the calculated significance values (sig) for all tests were below the predetermined significance level (0.05), with a degree of freedom of 24. This indicates that there are statistically significant differences between the pre- and post-tests in favor of the pre- and post-tests. Post-test. The differences observed between students were due to their use and commitment to the learning modules, following the sequential approach of the seven-year learning cycle. This approach included structured exercises and emphasized intellectual and cognitive aspects. Sequential execution of exercises holds great importance in various athletic endeavors and should be practiced diligently according to the learning cycle strategy. The Seventh Generation Method aims to reduce effort, while also incorporating elements of anticipation and joy<sup>[4]</sup>.

Implementing the seven-cycle learning cycle strategy played an important role in enhancing the student's cognitive agility. By honing their decision-making abilities and improving the accuracy of defensive performance, this approach promotes accurate execution. Student skill in applying the seven-cycle learning cycle strategy is critical to maintaining a clear vision. Since students practice consistently and rigorously, they are better equipped to meet the skill demands of the defensive side of volleyball<sup>[5]</sup>.

The significant differences in the seven-cycle learning approach can be attributed to the researcher's identification of factors that contribute to enhancing clarity of core skills. These improvements were reflected positively in the accuracy and speed of skill execution, which are critical components of defensive performance. However, some volleyball lessons and modern learning methods fail to provide the characteristics and elements necessary for effective skill development. In contrast, the seven-year learning cycle strategy emphasizes the importance of developing a clear understanding of movement. Through this modern approach, difficult skills are clearly explained and visualized, complete with illustrative pictures and students are alerted to possible

errors in the accuracy of defensive performance. In addition, the units in this strategy prioritize progressive motor learning, which leads to enhanced learning and development of all research variables. This is consistent with the idea that motor practice and exercise itself are the most important factors in motor learning<sup>[6]</sup>. The implementation of contemporary educational strategies, with a focus on diversity, received a positive response from female students, which enhanced their skills development. It is clear that female students do not have a unified curriculum for learning any particular skill, which necessitates the use of innovative and diverse educational strategies to enhance their abilities and knowledge<sup>[7]</sup>. The success of the seven-year learning cycle strategy can be attributed to several factors. A key factor was the sense of belonging the student felt when actively participating in defensive performance. This sense of belonging was enhanced by the teacher's encouragement during the performance, creating a cohesive group dynamic. Developing skill performance was a team effort, with each group member contributing to the overall progress. The student's strong desire for this development stemmed from her aspiration to enhance cooperation within the group, regardless of individual success.

Moreover, the learner's defensive presentation in front of the teacher and her colleagues, after observing the performance of her group members, led to the identification and correction of many of the errors she had committed during her performance. This highlights the importance of feedback as an important source of information, providing insight into the level of error and acting as a guiding force for the learner. Feedback not only helps achieve specific goals or standards, but also reinforces the relationship between stimulus and motor response, while promoting the repetition of appropriate

Fig. 1: Demonstrates the cognitive speed of the volleyball game

Table 1: Pre- and post-tests that assess cognitive speed and defensive capabilities in volleyball provide information that is valuable, such as the average, standard deviation, calculated t-value and sig-value.

Variables	Units	Pretest		Posttest		(t) value	Sig.	Indications
		mean	STD.	mean	STD.			
Cognitive speed	Degree	8.7	0.66	10.02	0.44	18.63	0.001	Sig.
Transmission reception accuracy	Degree	16.34	0.72	29.02	0.46	29.67	0.000	Sig.
Accuracy of the blocking wall	Degree	12.33	0.57	16.69	0.92	22.05	0.000	Sig.
defending accuracy	Degree	11.95	0.42	18.83	0.39	25.14	0.000	Sig.

motor responses. Through encouragement, the learner gains a clear understanding of the correct approach, which promotes improvement in subsequent performance<sup>[8]</sup>.

Moreover, the implementation of the seven-year learning cycle not only strengthened the teacher-student relationship but also enabled the student to actively participate in acquiring the necessary skills and knowledge. This curriculum has given the student the freedom to independently explore and discover effective performance techniques, promoting critical thinking and quick cognition. By visualizing and internalizing correct performance, the student was able to enhance accuracy in execution. This teaching process is characterized by dynamic interaction between teacher and learner, each of whom plays a crucial role in achieving the lesson objectives. As a result, the teaching process has evolved into a series of learning experiences carefully planned and implemented by the teacher to help learners achieve their pre-determined goals.

### CONCLUSION

- The cognitive abilities of female students in volleyball have a significant impact on their defensive performance, influencing both speed and accuracy are positively affected by applying the seven-cycle learning strategy
- Strategy: Encouraging students to actively participate in the learning process by asking questions and inquiring about skills is a key aspect of the seven-year learning and teaching cycle
- The learning cycle strategy plays an effective role in promoting collaborative work, facilitating the identification and correction of errors, as well as encouraging the implementation of accurate methods
- By implementing the learning cycle strategy and fostering a collaborative environment, students were able to experience a sense of enjoyment, anticipation and enthusiasm, which ultimately led to improved skill performance

- The cognitive speed and accuracy of the female student's volleyball defensive performance were influenced by the implementation of the seven-year learning cycle strategy, which allowed the freedom to express ideas

### RECOMMENDATIONS

- The cognitive aspects of defensive performance in volleyball, including speed and accuracy, play a crucial role can be developed by applying the seven-cycle learning strategy
- Explore additional research opportunities focused on offensive capabilities in volleyball, also considering a variety of students and various other sports
- By implementing the seven-stage role-based learning approach in educational institutions at all levels, we have seen significant progress in skill development, as well as increased enthusiasm and anticipation among female students

### REFERENCES

1. Mahedero, M.P., A. Calderón, P. Hastie and J.L. Arias-Estero, 2021. Grouping students by skill level in mini-volleyball: Effect on game performance and knowledge in sport education. *Percep. Motor. Skills.*, 128: 1851-1871.
2. Lola, A.C., G.C. Tzetzis and H. Zetou, 2012. The effect of implicit and explicit practice in the development of decision making in volleyball serving. *Percep. Motor. Skills.*, 114: 665-678.
3. Suárez, M.C., A.L.P. Serenini, J. González-Silva and M.P.M. Arroyo, 2020. Factors used to make appropriate decisions in youth categories in volleyball. *Sustainabil.*, Vol. 12. 10.3390/su12145633
4. Al-Haliq, M.A., A.S. Khasawneh and A.A. Al-Akor, 2013. The effect of mental training program related to skills teaching on learning the volleyball basic skills. *Int. J. Acad. Res.*, 5: 308-312.
5. Stamm, R., 1999. Testing individual abilities of 13-16-year-old female volleyball players and assessment of their proficiency in the game.

6. Turner, A.P. and T.J. Martinek, 1999. An investigation into teaching games for understanding: Effects on skill, knowledge and game play. *Res. Q. Exer. Sport.*, 70: 286-296.
7. Paul, D.J., T.J. Gabbett and G.P. Nassis, 2015. Agility in team sports: Testing, training and factors affecting performance. *Sport. Med.*, 46: 421-442.
8. Blomqvist, M., P. Luhtanen and L. Laakso, 2001. Comparison of two types of instruction in badminton. *Eur. J. Phys. Educ.*, 6: 139-155.