

## **The Effect of Skill Exercises According to the Analogical Thinking Strategy in Learning Some Types of Handball Shooting for First-Year Middle School Students**

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### **KEYWORDS**

skills, learning.

### **ABSTRACT:**

The importance of the research comes from using the analogical thinking strategy in learning, which pushes the student to exert the greatest possible effort in learning the skills. The researchers noted that the research problem crystallizes in the presence of a weakness in the level of performance of the shooting skill and that the methods used do not achieve the desired benefit in activating the learning process for students when used, which made the educational process a traditional process. Therefore, the researchers decided to use skill exercises according to the analogical thinking strategy in learning the shooting skill with handball for first-year middle school students as an attempt to find an effective way for students to learn these skills in an appropriate manner. The researchers used the experimental method of designing two equivalent groups. The research sample consisted of first-year middle school students, numbering (40) students. After completing the field experiment, the researchers concluded that using the analogical thinking strategy had a significant impact on learning the skills under study for the experimental group. There was also an advantage in the effect of using analogical thinking and its effectiveness in educational units.

### **1. Introduction**

The current era is an era of scientific progress in various fields of science and knowledge. Modern theories and trends have emerged in the field of education that aim to develop the educational process, keep pace with scientific developments, and work to prepare people in a manner commensurate with this progress, as the modern world has witnessed great progress in teaching methods and strategies. This progress was not the result of coincidence, but rather came about through perseverance and hard work through a deep understanding of what is included in the sciences of education in order to understand the needs of the student and develop his level of participation in the educational process. This is through research and constant knowledge of everything that is up-to-date in order to add modern information by following new scientific methods for access. The student reaches an advanced level of optimal performance.

The educational process is one of the fields that has received many scientific developments and changes because of the pivotal role it can play in building the learner and solving his problems. Therefore, many educational methods have emerged in which the effort and activity in the learning process are transferred from the teacher to the learner, as he is the focus of the educational process. Accordingly, This development in the field of learning has added new duties and responsibilities to the teacher, and one of the most important of these duties is creating an educational atmosphere that suits the learner's needs and inclinations, in addition to choosing the most appropriate exercises that lead to achieving the goals in the least effort and the shortest time, in a way that is compatible with the type of skill he is learning.

The strategy of analogical thinking in teaching is considered one of the modern strategies in the educational process in recent years, as it emphasizes the importance of the student's role in the educational process and that he uses his mental abilities in dealing with concepts, processing information, and forming the cognitive structure under the guidance of the teacher, instead of receiving ready-made information from him and retrieving it when required. From it, good learning is not achieved unless the student integrates new concepts and information into his cognitive structure, with the aim of understanding relationships and linking new concepts and information to his previous concepts and information, and thus reshaping his cognitive structure. The degree of the individual's comprehension of those concepts and information depends on how he stores them, processes them, and the method of retrieving them. .

Among the games and events that gained the attention of workers in several fields, including teaching methods, is the game of handball, which received a large share of support and encouragement. The game of handball is one of the games with high skill requirements that requires comprehensive preparation so that the learner can bear the burdens that he faces while learning the skills. It is also characterized by many diverse and changing situations and situations, so it requires the learner to have great mental abilities to enable him to move to take the appropriate place while possessing A very high skill that allows him to control and control the ball.

Analogical thinking is a strategyIt is one of the modern teaching strategies that contribute effectively to encouraging active learning among students and achieve satisfactory educational results for the teacher, whether in terms of the students' achievement level or the smoothness of its steps and the reflection of its results on the level of the teacher's performance in the lesson. The teacher's analogical thinking strategy does not require special circumstances or complex procedures because it suits all types of students. Likewise, the classroom environment does not need anything new, but rather relies only on dividing the students into cooperative groups and does not require complex skills, and relies on familiar reinforcement phrases only.

Hence, the two researchers believe that the importance of their research lies in shedding light on the importance of modern teaching methods, including the analogical thinking strategy, and its relationship to the student's success in increasing the learning of basic handball skills. This research also provides physical education teachers with illustrations of the skill exercises prepared using the analogical thinking strategy, with a detailed explanation of each. Exercise and how to perform it, as well as directing the attention of those in charge of handball to the importance of learning basic handball skills at this age stage.

Research problem: -

In order to raise the level of the game of handball, there must be proper and good planning for educational programs based on scientific foundations in accordance with modern teaching strategies and methods. Skill learning requires high intellectual performance to stabilize and master the skill in order to achieve handball skills, because of the speed of performance and the difficulty of learning that distinguishes these skills. When observing the reality of the physical education lesson in our educational institutions, we find that traditional methods still constitute a large presence among many of the educational methods used by the teacher, as the role of the students is negative and they rely on the teacher greatly in order to obtain information, so that the teacher becomes the focus of the educational process, and During the researcher's modest experience, it was found that most teachers are not familiar with modern strategies in teaching, such as the analogical thinking strategy, and this in turn is reflected in the students and their level of performing basic handball skills as a result of the absence of an active role for the students and weak participation in the lesson. The researcher found that one of the reasons for the weak skill is Shooting in the game of handball is that the educational exercises used in the educational units are traditional exercises that do not take into account individual differences in learning, and that the teacher is the focus of the educational process.

Research objective: -

- Preparing skill exercises according to the analogical thinking strategy in learning some types of handball shooting skills for first-year intermediate students.
- Identifying the effect of using skill exercises according to the analogical thinking strategy in learning some types of handball shooting skills for first-year intermediate students.

Research hypotheses: -

- There are statistically significant differences between the results of the pre- and post-testsFor the experimental and control groupsLearning the skill of shooting handball for students and for post-tests.
- There are differencesStatistically significantIn the results of the posttests inTeaching students the skill of shooting handballBetween the two research groups, the experimental and the control, and in favor of the experimental group.

Areas of research: -

- The human field: -First year middle school students (Al-Naqa High School for outstanding students).
- Temporal field:-For the period from (11/23/2023) until (1/7/2024).
- Spatial field: -Al-Naqa Secondary School for outstanding students.

Research methodology: -

The nature of the problem and the research objectives determine the appropriate research methodology, so the researchers used the experimental method with two equal groups (experimental and control) with a pre- and post-test.

Research sample: -

The process of selecting the sample is closely linked to the nature of the research, as it is the model on which the researchers conduct the entirety and focus of their work. Accordingly, the researchers took the following procedures to select the research sample:

1. Research community: The research population included secondary schools for boys in Diyala Governorate, Baqubah District, the center, as it was identified from first-grade intermediate students through the intentional method.
2. The research sample: The research sample was chosen randomly and consisted of students in the first year of Al-Naqa Secondary School for Outstanding Excellence, numbering (40) students for the academic year (2023-2024), divided into two divisions (A-B). The research sample was distributed by lot to the control division (A), numbering 20. ) and Division B (experimental), numbering 20.

## **2. Methods, devices and tools used in the research: -**

- ❖ Means of collecting information (Arab and foreign sources and references, testing and measurement, data compilation lists, statistical methods, scientific observation)
- ❖ Tools used in the research (a handball court, 10 Chinese-made handballs, a whistle (FOX (Canadian-made, 5 pens, 20 plastic markers, length measuring tape and adhesive tape, illustrative film pictures).
- ❖ Devices used in the research (digital camera type)NEKON (2), DELL laptop (1), KISLO electronic stopwatch (4).

Tests used in the research: -

Test of aiming from stability (Qasim and Khamis, 2011, 272): -

Test name: Steady shooting test

Objective of the test: Steady shooting accuracy.

Tools:(8) hand balls, (4) squares, each 40 x 40 cm.

Performance Description:

- 1- The student stands behind the 7-meter throw line, holding the ball, as in Figure (1).
- 2- When the signal is given, the student shoots at square (1), then (2), then (3), then (4).
- 3- Repeats the performance again.

the rules:. One of the student's feet must be kept steady and not moved while performing the throw.

The ball is played within three seconds of starting to hear the signal.

Orientation and registration: A score is calculated for each shot inside the designated box. A zero is counted for the shot if the student commits a legal violation, such as moving his fixed foot or not shooting within (3 seconds) of hearing the signal.

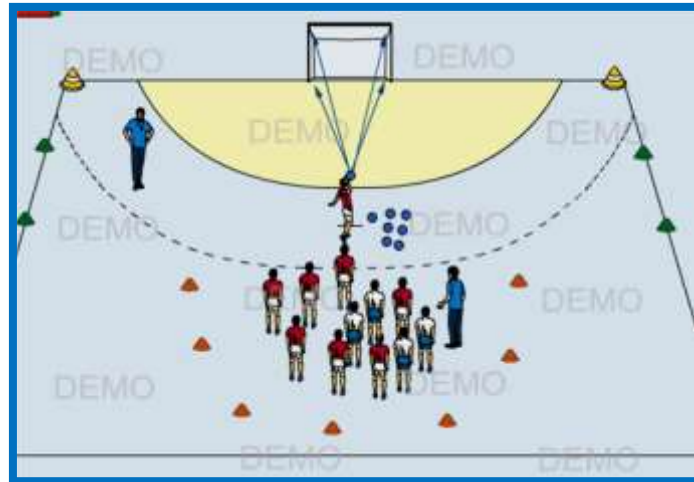


Figure (1) shows the performance of the shooting test from stability

Test of aiming from jumping in front (Kamal and Muhammad, 1980, 176): -

Test name: Shooting by jumping forward.

Tools: (Handball court, 6 legal handballs, two squares (60 x 60 cm) suspended in the goal).

Performance method: Shooting is made from a point located at a right angle to the middle of the goal line and 10 meters away from it, provided that the shot is preceded by preparation for running in a two- and three-man rhythm, noting that the shot is made at two specific goals placed in the upper corners of the goal, with dimensions of (60 x 60 cm) as shown in the figure (2).

the conditions It is not permissible to exceed the limited point for aiming.

- Shooting is done once at the right target and once at the left target.
- Shooting is by jumping in front.
- Each player has 3 attempts (for each pending goal).

Register: A shot is considered valid when it hits the target or if it collides with its borders, meaning the sum of the balls that hit the target and its borders is counted from a total of 6 attempts.

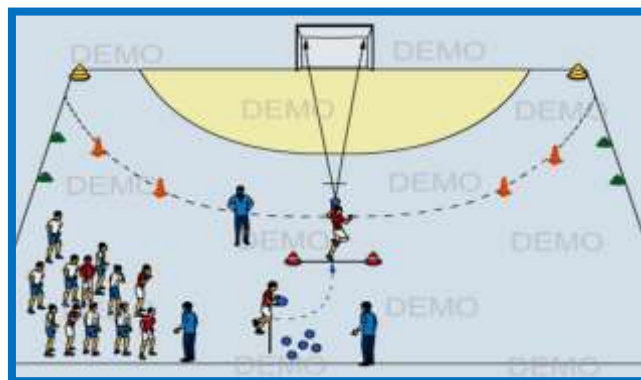


Figure (2) shows the performance of the forward jumping aiming test

Testing the accuracy of aiming from jumping high (Dia and Nofal, 2001, 508): -

Test name: Aiming accuracy from jumping high

Purpose of the test: Aiming accuracy.

Tools: (12) handball, a high jumping device with a height of (150 cm) and the distance between the goal posts (2 metres), a curtain of cloth or strong wire that completely covers the goal with (4) holes each (40 x 40 cm)

representing the four corners of the goal, a jumping device. It is placed on the 6-meter line and the start of the movement is 11 meters from the goal.

Performance method: The student stands behind the starting line (following the shooting hand) and directly in front of the jumping device post, holding the ball. The student begins to take (2-3) steps, then the shot leads from jumping high to square (1), then to (2), then to (3). Then to (4).

The performance is repeated (3) times, i.e. he shoots (12) balls, three of them into each of the four squares, as in Figure (3).

the rules: Do not take more than three steps.

Register: A point is counted if the ball enters the square designated for shooting.

A zero is scored for a shot outside the square.

The result of a shot in which the student moves more than three steps is not counted.



Figure (3) shows the performance of the high jump aiming test

Application of the main experiment: -

Pre-test: -

The pre-tests for the research sample were conducted on Wednesday (November 23, 2023) and on the courtyard of Al-Naqa Secondary School for outstanding students at nine in the morning. The researchers worked to establish the same conditions during the application of the post-test, through the method of conducting the tests and the assistant work team.

Application of the main experiment: -

The main experiment for the research sample was carried out on Sunday, corresponding to (11/26/2023) and was completed on Monday, corresponding to (1/4/2024) on the sample members, at a rate of (two) educational units per week, and the number of training units reached (12) units, and it took time. Each training unit (45 minutes) was divided into three sections: (introductory 15 minutes, main 25 minutes, and final 5 minutes). The researchers' work was limited to the first part of the main section of the training unit, which is (25 minutes).

Post-test: -

The post-tests were conducted after completing the educational units, which amounted to (12) educational units, on Sunday (1/7/2024), taking into account all circumstances, conditions, and pre-test procedures.

Statistical methods: -

The researchers used appropriate statistical methods to process the data generated through pre- and post-tests using the (Spss).

### 3. Presentation and discussion of the results: -

Presenting and discussing the results of testing some types of correction in the pre- and post-tests for the experimental and control groups.

**Table (1) Shows the statistical description of the pre- and post-tests for the experimental and control groups in the aiming test**

| indicat<br>ion | mistake<br>percentage | valuet<br>calculated | A F  | S-F  | standard<br>deviation | Arithmetic<br>mean | Sample<br>volume | the<br>exams | Totals                | Types of<br>shooting                 |
|----------------|-----------------------|----------------------|------|------|-----------------------|--------------------|------------------|--------------|-----------------------|--------------------------------------|
| moral          | 0.000                 | 11.72                | 1.58 | 4.14 | 1.02                  | 1.75               | 20               | Tribal       | Experimental<br>group | Shooting<br>from<br>stability        |
|                |                       |                      |      |      | 1.43                  | 5.89               | 20               | after<br>me  |                       |                                      |
| moral          | 0.000                 | 4.51                 | 1.43 | 1.44 | 1.11                  | 1.70               | 20               | Tribal       | Control group         |                                      |
|                |                       |                      |      |      | 1.86                  | 3.14               | 20               | after<br>me  |                       |                                      |
| moral          | 0.000                 | 13.27                | 1.27 | 3.77 | 0.92                  | 0.75               | 20               | Tribal       | Experimental<br>group | Shooting<br>by<br>jumping<br>forward |
|                |                       |                      |      |      | 1.17                  | 4.52               | 20               | after<br>me  |                       |                                      |
| moral          | 0.000                 | 3.43                 | 1.33 | 1.02 | 0.98                  | 0.78               | 20               | Tribal       | Control group         |                                      |
|                |                       |                      |      |      | 2.18                  | 1.98               | 20               | after<br>me  |                       |                                      |
| moral          | 0.000                 | 16.41                | 1.76 | 6.45 | 0.99                  | 2.12               | 20               | Tribal       | Experimental<br>group | Shooting<br>by<br>jumping<br>high    |
|                |                       |                      |      |      | 1.45                  | 8.57               | 20               | after<br>me  |                       |                                      |
| moral          | 0.000                 | 4.70                 | 1.25 | 2.43 | 1.71                  | 2.23               | 20               | Tribal       | Control group         |                                      |
|                |                       |                      |      |      | 1.24                  | 4.66               | 20               | after<br>me  |                       |                                      |

Presenting and discussing the results of the handling and aiming skills tests in the post-tests for the experimental and control groups.

**Table (2) Shows the means, standard deviations and valuesThe calculated t, the error rate, and the statistical significance of the post-tests for the experimental and control groups in the types of shooting under investigation.**

| Statistic<br>al<br>significa<br>nce                                             | rate<br>The<br>error | value(t)<br>calculat<br>ed | Control group |      | Experimental group |      | measru<br>ing<br>unit | Variables                      | T |
|---------------------------------------------------------------------------------|----------------------|----------------------------|---------------|------|--------------------|------|-----------------------|--------------------------------|---|
|                                                                                 |                      |                            | + - A         | s-   | + - A              | s-   |                       |                                |   |
| moral                                                                           | 0.000                | 5.198                      | 1.86          | 3.14 | 1.43               | 5.89 | degree                | Shooting from<br>stability     | 1 |
| moral                                                                           | 0.000                | 4.593                      | 2.18          | 1.98 | 1.17               | 4.52 | degree                | Shooting by<br>jumping forward | 2 |
| moral                                                                           | 0.000                | 9.178                      | 1.24          | 4.66 | 1.45               | 8.57 | degree                | Shooting by<br>jumping high    | 3 |
| Below the level of significance (0.05)And degrees of freedom $n1 + n2 - 2 = 38$ |                      |                            |               |      |                    |      |                       |                                |   |

Discussing the results of the tests of the research variables between the pre- and post-tests.

Table (3) shows that the values of the arithmetic means for the post-test of the experimental group in the skills under investigation are completely different from the post-test for the control group, as it was found that the value of (t) calculated for the skill of aiming from a standstill is (5.198), the skill of aiming from jumping forward is (4.593), and the skill of aiming from jumping high is (9.178), and since the value of the error rate

for the research variables as a whole is smaller than the level of significance (0.05), this means that there is Significant differences between the two groups and in favor of the experimental group.

The researcher attributes these significant differences in favor of the post-tests in the experimental group to the use of the analogical thinking strategy prepared by the researcher, which was prepared, implemented, and applied on his own scientific foundations, as we find that the effect of the analogical thinking strategy was effective in creating learning and then helped to show clear progress. At the level of skills under research, (Qutait, 2013, 125) states, "The analogical thinking strategy provides Students are assigned tasks that allow the use of higher mental skills, and encourage the student to discover the learner's creative thinking abilities and move away from the usual pattern of thinking.

He points out (Radi Al-Waqfi, 2010, 497) "The analogical thinking strategy works to develop mental skills and intellectual flexibility, get rid of rigid templates and fixed images, and develop the learner's motor skills."

(Mansi, 2017, 109) Through the analogical thinking strategy, a natural environment full of stimuli is provided by presenting activities and skills in a way that arouses the interest of teachers, and this helps to develop the learner's energies and feelings that make him a creative person.

And points (March, 1999, 42) "The analogical thinking strategy is an indirect method of teaching that depends on the teacher directing his students to involve them in the learning process by directing a group of students in the correct direction of motor performance, using some mental processes and previous experiences.

(Ghassan Qteit, 2012, 130) also mentions the analogical thinking strategy that works on: Employing modern teaching methods based on the use of mental processes, so that the student becomes the focus of the educational process and the focus of educational activity, thus creating active, effective, and more accurate learning than traditional education."

#### **4. Conclusions and recommendations**

Conclusions:-

1. The use of the analogical thinking strategy had a significant impact on learning the shooting skill for the experimental group.
2. The emergence of a preference for the effect of using analogical thinking and its effectiveness in educational units.
3. The educational curriculum adopted in the school (the followed curriculum) helped in learning the shooting skill among members of the control group, but at lower rates than the experimental group.
4. The clear superiority of the experimental group over the control group in learning the skill of shooting indicates the success of using the analogical thinking strategy in students' learning.

Recommendations:-

1. Emphasizing the use of analogical thinking strategy in learning as it is more influential at various stages of learning and is an essential part of the content of the curriculum.
2. The necessity of using the analogical thinking strategy in learning other skills and in other games.
3. Work on conducting research or similar studies on the analogical thinking strategy as it is suitable for all age levels and other specializations, taking into account the design according to what suits the age group and type of subject.
4. The necessity of holding courses and seminars for those interested in educational science to adopt modern methods and strategies in the learning process.

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