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The effect of the cognitive acceleration strategy in teaching some basic handball skills to students

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Abstract

The purpose of this paper is to preparing educational units according to the cognitive acceleration strategy in teaching some basic skills in handball to students, and identifying the effect of using the cognitive acceleration strategy in teaching some basic skills in handball to students. The researchers assumed the existence of a statistically significant difference in cognitive acceleration in learning some basic handball skills among the students of the research sample. The researchers used the experimental method in a (Two equal groups) manner on the second-year students in the College of Physical Education and Sports Sciences - University of Wasit. And for the academic year 2023-2024, which is 20 years old. Their number was (61) after excluding the female students, and the research sample was divided randomly. Section (B) was chosen to be a control sample and Section (C) was chosen to be an experimental sample. (20) students were chosen for both the control and experimental groups in a random manner from each section. So that the number of the sample became (40) students, homogeneity and equivalence were carried out in the variables that are likely to affect the program, which are (Weight, age, and height). The basic handball skills used in the research were determined through a questionnaire form for the purpose of determining them, and they were presented to (15) experts. And a specialist in the field of the game of handball in order to determine the most important basic skills. Appropriate tests were identified to measure the basic handball skills under research. Scientific foundations were found for the tests designed to measure some basic handball skills, a pre-test, and the preparation of educational units according to the cognitive acceleration strategy. The exploratory experiment and the application of the educational curriculum and testing. Dimensional and statistical methods. The researchers concluded that using the cognitive acceleration strategy is more effective than the traditional method used in acquiring some basic handball skills. The researchers recommended the necessity of using the cognitive acceleration strategy, which is one of the modern methods in teaching programs and preparing students of physical education and sports sciences, especially in teaching basic handball skills. Conducting similar studies and research on the rest of the basic skills in handball and for other academic stages, encouraging students to use self-feedback during performance, increasing their interaction with the lesson and the teacher, and training teachers on different types of teaching methods for the purpose of raising the scientific level of teachers.

Keywords: Cognitive acceleration strategy, basic handball skills, educational units

Introduction

We currently live in an era of science and technology that is characterized by development and rapid change in scientific knowledge, and that this progress is not limited to a specific field but rather in various fields of life, including the sports field. Researchers in the field of sports, including teaching methods and motor learning, confirm the use of types Of the learning strategies in educational units and physical education lessons to improve the level of learning and mental development among learners, and one of the important educational approaches that have proven effective in learning is the cognitive acceleration strategy, which is considered an innovative approach to education that was the result of cognitive development research and was introduced into the educational curriculum for learners, It is a method of teaching and learning at the same time, as learners participate in exercises and activities very effectively by creating a diverse and rich educational environment by linking the learner's previous experiences with his new experiences, creating a connection between them, and developing their meta-thinking.

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This strategy is considered one of the modern strategies that facilitates the process of learners' acquisition of cognitive, skill, and motor abilities, and the game of handball is one of the group games that has received great attention to raise the level of technical performance. In order for this game to rise, attention is focused on preparing a strong base of game practitioners. From youngsters in academies and schools as a major source in providing clubs with players, relying on modern methods in developing offensive and defensive skills that represent infinitely different models for a set of individual skills that merge with each other and overlap in their final stages to form the beginning of the next skill, which the player performs in situations. A specific game to achieve a specific goal according to its requirements.

Here came the importance of research into using the cognitive acceleration strategy in learning some basic handball skills and knowing its effective role in raising the level of education among learners.

Research problem

In view of the rapid development that has occurred in educational methods and their role in correcting and treating errors and accelerating the learning process, it has become necessary to know these methods and arrive at the most appropriate method in teaching these offensive and defensive skills. The more successful the teacher is in choosing the most appropriate method with the capabilities of the individuals, their level, and the nature of the skill, within The possibilities of the available educational environment led to more advanced and successful learning, and from here lies the problem of the research, which is that most of the problems resulting from the traditional teaching followed by teachers have arisen because the teaching process is performed in one sentence without paying attention to the details, and building the scientific material by analyzing it into its primary components of information. And facts and generalizations, which may lead to weak educational impact, and some teachers' delay in academic achievement, as the teaching method is often the teacher's imperative method, so researchers decided to introduce new methods to the educational process in order to improve and accelerate the learning process for students in a lesson. Handball is also a shortcut with effort and time.

Research aims

- Preparing educational units according to the cognitive acceleration strategy in teaching some basic skills in handball to students.
- Identify the effect of using the cognitive acceleration strategy in teaching some basic handball skills to students.

Research hypothesis

There is a statistically significant difference for programmed instruction in learning some basic handball skills among students in the research sample

Research fields

Human field

Second-year students in the College of Physical Education and Sports Sciences - Wasit University

Time field

For the period from 4/2/2024 to 2/5/2024

Spatial field

Handball court at the College of Physical Education and Sports Sciences - Wasit University

Research procedures

The researchers used the experimental method, as it is compatible with the nature of the research problem.

Community and sample research

The research population was determined by the students of the second stage in the College of Physical Education and Sports Sciences for the academic year 2023-2024, who numbered (61) after excluding the female students. The research sample was divided randomly, as Division (B) was chosen to be a control sample and Division (C) was chosen to be a sample. Experimental, and (20) students were selected for both the control and experimental groups in a random manner from each section, so that the number of the sample became (40) students. The processes of homogeneity and equivalence were performed in the variables that are likely to affect the program, which are (Weight, age, and height).

Table 1: Shows the homogeneity of the sample members in the aforementioned variables

No.	Variables	Measruing unit	Mean	Median	Standard deviation	Skew ness
Control group	weight	Kg	62.2	61	4.6	0.78
	age	Year	19.4	19	1.3	0.92
	Length	Cm	158.35	159	2.5	0.78-
Experimental group	weight	Kg	61.7	61	3.2	0.66
	age	Year	19.6	19.2	1.4	0.86
	Length	Cm	158.2	157	3.8	0.95

Table (1) shows the homogeneity of the sample members in the study variables, as the skewness coefficient for the variables in the two groups was limited to between (+1 and -

1), which indicates that the sample members are homogeneous in the variables (Weight, age, and height).

Table 2: Shows the parity of the two groups in the aforementioned variables

Variables	Control group		Experimental group		T Calculated	Sig
	Mean	Standard deviation	Mean	Standard deviation		
Weight/kg	62.2	4.6	61.7	3.2	0.49	Non sig
Age/years	19.4	1.3	19.6	1.4	0.26	Non sig
Length/cm	158.35	2.5	158.2	3.8	0.67	Non sig

Table (2) shows the parity of the two study groups in the variables (weight, age, and height), as the T value calculated for these variables was (0.49, 0.26, and 0.67), respectively, which are values lower than their tabulated values of (2.02) at the degree of freedom (38) and the significance level is (0.05), which indicates that there is no significant difference between the two groups in these variables.

Determine the basic handball skills used in the research:

After the researchers reviewed scientific references and previous research, and for the purpose of identifying the most important basic skills in handball, a questionnaire form was prepared for the purpose of identifying them, and it was presented to (15) experts and specialists in the field of handball in order to identify the most important basic skills, by marking (√) In the score box chosen for each of (Skills)

and on the scale from (0-10), noting that the highest score on the scale is (10) and the lowest is (1), and zero means lack of importance, provided that any observation that the specialist finds important is taken into account. It was not mentioned in the form, and after the forms were collected and the data was transcribed and processed statistically, the skills that received a relative importance of more than (53.33) % of the degree of importance were accepted, and the skills (side drop shooting, chest pass) were excluded, and the percentage was extracted on the basis of half the degree. The maximum obtained from the product of multiplying the range (10) x the number of experts (15) + half the range (5), so the total is (80), which is the part of (150) and its percentage is (53.33%). (Ayed Karim Al-Kanani, 2008) ^[1]. Table (3) shows the total scores according to the importance and percentages of the basic skills.

Table 3: Shows the overall scores according to the relative importance of basic handball skills

S. No.	Variables	Priority level	Relative importance	Sig
1.	Catch the ball	140	93.33%	Sig
2.	Shoulder level pass	138	92%	Sig
3.	The drum is in a straight line of 30 m	118	78.66%	Sig
4.	Shooting at shoulder level	101	67.33%	Sig
5.	Long jump shooting	98	65.33%	Sig
6.	Side fall shooting	54	36%	Non sig
7.	Chest pass	22	14%	Non sig

From Table (3) we notice that some of the basic skills that were presented to the experts received a relative importance greater than (53.33), which is the acceptable percentage for accepting the variable, so the skills that obtained an acceptable percentage were chosen.

- Catching the ball.
- Shoulder level pass.
- Tap in a straight line of 30 m.
- Aim at shoulder level.
- Long jump shooting.

Determine the appropriate tests to measure the basic handball skills under study

A set of basic skills tests were extracted and presented in the form of a questionnaire to a group of specialists in the field of teaching methods, motor learning, tests and standards in handball, with the aim of identifying the most important tests for the basic skills under study. The result of their opinions was an agreement rate of more than (53%), so the researchers resorted to identifying tests to measure the basic skills identified by experts, which are.

Catching the ball

Purpose of the test: to measure the ability to control the ball

Tools: Legal handball

Performance specifications: The student holds the ball with the throwing hand and raises it to the side, and with the signal, the student makes arm swings (in a circular motion forward and at maximum speed).

Conditions: The arm must be straight and the palm must be facing the ground.

Recording: The number of correct swings made by the student is recorded from the moment the signal is issued until the ball falls from his hand. The student has three attempts, the best of which is recorded for him.

Shoulder level passing test

Purpose of the test: To measure the speed and accuracy of passing and receiving from running

Tools: Handball court - (3) markers and (3) ball carriers. The distance between the markers is (6) meters, and the distance between the ball carrier and the other is also (6) metres. As for the distance between each marker and the corresponding ball carrier, it is (4) metres. Handball - stop watch - whistle.

Performance specifications: The student stands at the starting line. When the start signal is heard, the student runs quickly in the direction of the ball carrier (A) to catch the ball and then passes it to the goalkeeper (1), then runs in the direction of the ball carrier (B) to catch the ball and passes it to the goalkeeper (2), then runs in the direction of the ball carrier (C). He picks up the ball and passes it to goalkeeper (3), and the run continues until the last goalkeeper.

Performance conditions

- Do not dribble the ball.
- The pass must be in a straight line.
- The forearm forms an almost right angle with the upper arm, and the pass should be from shoulder level.
- Do not pass away from the person.
- Do not run with the ball more than (3) steps or hold it for more than (3 seconds).

Registration method: Calculating the total time of the test from the start signal until the student crosses the finish line,

with the addition of (1 second) if any of the performance conditions are violated.

Plump test in a straight line 30 m

Purpose of the test: To measure the speed of the ball's bump in a straight line

Tools: A handball - a stop watch - a whistle - two lines, one is the start line and the other is the finish line, and the distance between them is (30) meters.

Performance specifications: The student stands behind the starting line holding the ball, and upon hearing the start signal, the student taps continuously in a straight line with one hand at maximum speed until he reaches the finish line.

Performance conditions

- The tapping motion should be done with one hand and from the wrist, taking into account its relaxation and flexibility.
- You should look forward when hitting the ball.
- The student is given two attempts and the time of the best attempt is calculated.
- The attempt will be repeated if the student commits any legal error (stacking the ball and then receiving it and re-stacking it again, hitting the ball with the foot during the tap, walking more than three steps without tapping), or if the student does not control the ball or keeps it away from him by a distance of no less than (2m).
- The height of the ball should be at the level of the pelvis.
- The ball does not hit the fingers during the performance.

Registration Calculates the total time of the test from the start signal until the student crosses the finish line, with the addition of (1 second) if the student exceeds any of the performance conditions.

Aim at shoulder level with stability

Purpose of the test: To measure shooting speed at shoulder level of stability.

Tools: (6) handballs - marker - aiming marker

Description of performance: The student stands behind the middle of the field and at the start signal, the student runs to shoot from the target mark on the right side, then returns to the goal post and runs to shoot from the target mark on the left side, and the process continues until the six balls are completed.

Performance conditions

- It is necessary to keep one foot firmly on the ground while shooting.
- Swing the pointing arm backwards.
- Facing the shoulder opposite the throwing arm while shooting.
- The forearm and upper arm must form an angle of approximately (90) while aiming.
- The shot is canceled if the anchor foot moves off the ground, and so on if you do not shoot within (3) seconds after reaching the shooting mark.

Registration method: Calculating the total time of the test from the start signal until the student finishes the (6) balls, with the addition of (1 second) in case of violating each of the performance conditions.

Long jump shooting

Purpose of the test: Accuracy of long jump shooting.

Tools: A handball court, (8) handballs, four squares in the corners of the goal, each square measuring (60cm x 60cm).

Description of the performance: The student stands 11 meters away from the goal line and at the specified mark, and when the start signal is given, the student takes three steps to shoot at the squares, so that he shoots at all the squares on the goal, with two balls in each square.

Performance conditions

- The ball does not hit the foot.
- Do not run with the ball more than 3 steps.
- Do not touch the goal circle while shooting.
- The ball does not go out of the goal.
- Swinging the throwing arm while shooting

Scoring method

The student is given two shots for each square, for a total of eight shots. A grade is not counted for the student if he commits one of the following violations: (Shooting without a long jump. Touching the goal circle while shooting. The ball going out of the goal. Raising one foot and landing on the other foot. Flying upwards while shooting the maximum score for the test is (8) points.

Scientific foundations of tests designed to measure some basic handball skills

Validity of tests

The researchers relied on the veracity of the arbitrators (logical veracity), as the veracity of the test was verified by presenting the questionnaire to a number of experts and specialists, and it obtained an agreement rate of more than (75%) from the experts on the tests that were used.

Stability of tests

The retest method was used to determine the inevitability of the stability of the tests for a sample of (10) students from Division (B) who were not included in the main experiment, where the correlation coefficient (Pearson) was extracted between the results of the two tests for skills (holding the ball, passing at shoulder level, tapping with a line). Straight 30 m. Shooting at shoulder level. Shooting with the long jump. The reliability values of the tests were respectively (0.88, 0.78, 0.86, 0.87, 0.84).

Objectivity of tests

The researchers relied on the objective evaluation of the evaluators regarding the basic handball skills and for each attempt the specific evaluation score. Thus, the researchers reduced the degree of bias, fanaticism, and personal factors of the evaluators on the evaluation score for each laboratory.

Pretests

The researchers conducted pre-tests for the experimental and control groups on Thursday, February 1, 2024. The

researchers thoroughly explained the tests used on the research sample before starting the tests on the sample.

Preparing educational units according to the cognitive acceleration strategy

The researchers prepared the educational program according to the cognitive acceleration strategy, where the educational units, their divisions, and their components were developed, which are divided into three main sections, and each section has a purpose that complements the other section to bring the learner to the desired goal. It was presented to a group of experts with experience and specialization in teaching methods in the field of teaching. Physical education and sports sciences and benefiting from their experience in how to apply the modern strategy that is based on basic steps after setting educational objectives for the investigated skills. Therefore, the researchers prepared special educational units for the members of the experimental group according to the cognitive acceleration strategy consisting of a set of exercises that are appropriate to the skill level of the learners with Taking into account the sequence of skills and grading from easy to difficult, thus reflecting positively on learning some basic skills in handball.

Application of the educational curriculum

The primary goal of any educational curriculum is to raise the level of the player to the best possible degree of progress in the skills contained in the program. The educational program was implemented at a rate of two educational units per week and at a rate of (Two hours) per week, and according to the handball curriculum for the second stage in the college, and for a period of (12) weeks and (12) educational units, and with the help of the assistant work team, the researchers applied the educational curriculum to the experimental group. The educational unit for the experimental group was divided into three sections:

Preparatory section

It includes (The introduction - the general warm-up - the special warm-up) and its time is (15) minutes, as the introduction and the general warm-up are combined (5) minutes, in which attendance is taken and the required tools are prepared. In this part, general exercises for the parts of the body are given, then the special warm-up is (10) minutes and is completed. In this part, special exercises are given that serve the main part of the unit, and the total preparatory section is (240) minutes.

Main section

Its time is (65) minutes and includes the educational part (30) minutes and the applied part (35) minutes, and the total number of the main section is (1,040) minutes.

The educational part: It dealt with three stages of the cognitive acceleration strategy

Sensory preparation stage

Where the teacher prepares for the skill to be learned, by asking questions or a situation that stimulates the thinking of the players and requires them to cooperate to reach a solution, such as displaying a drawing, video, or picture.

The stage of cognitive conflict

In this step, the teacher places the students in a contradictory event that contradicts their expectations so that we know

whether there is a cognitive conflict between their previous information and the new information, which prompts them to research and investigate.

Thinking about thinking

In this step, the teacher directs the students to be aware of their answers, that is, to justify their answers.

Applied part: Addressing the fourth stage of the strategy, which is bridging: In this stage, the teacher directs the students in linking their previous experiences with their new experiences and putting them in (Exercises prepared) by the researchers.

Concluding section

It includes (A recreational game, calming exercises, returning the tools to their designated place and then leaving) and its duration is (10) minutes.

Post-tests

After completing the application of the educational curriculum according to the cognitive acceleration strategy, the researchers decided to conduct the post-tests on Thursday 2/5/2024.

Statistical methods

Arithmetic mean, standard deviation p , T's law for independent and interconnected samples, skewness coefficient (Wadih Yassin Muhammad Al-Tikriti and Hassan Muhammad Al-Obaidi, 1999) ^[2].

Results and discussion

It is clear from Table (4) that there is a statistically significant difference between the pre- and post-tests for the control group, at a significance level of (0.05) and a degree of freedom (19) in the variables (holding the ball, passing at shoulder level), when the tabular T value is (2.09) Which indicates that there is a significant difference between the pre- and post-tests, in favor of the post-test for the control group. Table (5) also shows that there is a statistically significant difference between the pre- and post-tests of the experimental group, at a significance level of (0.05) and a degree of freedom (19) in the variables (holding the ball, passing at shoulder level, tapping in a straight line 30 meters, shooting at shoulder level. Shooting with the long jump) when the tabular T value is (2.09), which indicates that there is a significant difference between the pre- and post-tests and in favor of the post-test for the control group. This is due to the effectiveness of the programmed education method used with the experimental group members, which lasted for a period of (12) twelve weeks. An educational unit. When referring to Table (4), we find that the control group achieved improvement in the post-test compared to the pre-test in both the skills of (catching the ball and hitting a straight line 30 meters). The reason for this is that the sample obtained an appropriate amount of repetitions for performing each of the following: These skills and this led to their development in the presence of appropriate feedback in the traditional method, as for a skill that does not require high accuracy, it is enough to obtain appropriate repetitions that allow each individual of the sample to develop in it, as development here depends on strengthening the motor programs related to the exchange of work between operations. Mentality is a muscular system

without the need for precision in performance, and this appeared clearly among the post-test of the above skills, indicating that there was a significant difference for the control group in the post-test. As for the skills (passing at shoulder level, shooting at shoulder level, and shooting with the long jump) they are among the precise skills that need to be evaluated. To the accuracy of performance, in addition to its need for strength, speed, and compatibility with the work of the nervous and muscular systems and the various sensory systems, so there were no clear differences in the post-test. The researchers attribute this to the fact that the approach followed did not emphasize strengthening all aspects related to the skills, so this skill was incomplete in the process of achieving it. It has reached a high stage of development, and it is clear from the results presented that the control and experimental groups have benefited from the use of the two educational approaches (traditional and programmed instruction) to develop the basic handball skills under study, and the difference is clear between the arithmetic means for them in the post-tests, and they were complete beginners and had not played the game of ball. The hand was previously taught, and the reason is due to the gradual progression in the introductory educational units,

and this is what was confirmed by (Dhafer Hashem Ismail, 2002) [3]. In that “one of the natural phenomena of the learning process is that there must be development in learning as long as the teacher follows the steps of the sound foundations of learning and teaching, and in order for the beginning of learning to be sound, it is necessary to clarify the explanation, presentation, and rehearsal of correct performance and focus on it until performance is consolidated and stable.” What has increased the acquisition and development of learning is the use of the principle of diversification in applied exercises. Diversification and overlap in exercises is a basic approach to teaching motor skills and is the cornerstone of practicing sports and games. This is what was confirmed by (Magill 1998) in “Diversifying exercise experiences and organizing them into exercise periods.” Diversity in movement will increase the acquisition of educational experience by deriving variable exercise experiences that increase the ability to perform the skill better.” This is what helped the learner to accelerate his learning and invest time and effort in the specified educational period, which was demonstrated by the control and experimental groups.

Table 4: Shows the arithmetic means, standard deviations, and tabular and calculated T-values for the pre- and post-tests of the control group in the variables under study

Groups	Test	Pre-test		Post-test		Calculated t value	Tabular value	Sig
		Mean	Standard deviation	Mean	Standard deviation			
Control group	Caught the ball	8.23	1.36	7.46	1.49	2.96	2.09	Sig
	Shoulder level pass	10.24	1.78	9.98	1.23	1.63		Non sig
	The drum in a straight line is 30 m	11.76	2.94	10.99	1.99	2.55		Sig
	Shooting at shoulder level	13.28	2.41	12.89	2.78	1.59		Non sig
	Shooting from the long jump	3.4	0.47	4.24	0.11	0.59		Non sig

The value of the tabular T at the degree of freedom (19) and the level of significance (0.05) is equal to (2.09)

Table 5: It shows the arithmetic means, standard deviations, and tabular and calculated T-values for the pre- and post-tests of the experimental group on the variables under study

Groups	Test	Pre-test		Post-test		Calculated t value	Tabular value	Sig
		Mean	Standard deviation	Mean	Standard deviation			
Experimental group	Caught the ball	8.81	1.25	7.10	1.12	2.97	2.09	Sig
	Shoulder level pass	10.69	1.34	8.34	1.13	3.79		Sig
	The drum in a straight line is 30 m	11.55	2.35	9.50	1.23	2.27		Sig
	Shooting at shoulder level	13.94	2.37	11.35	2.24	2.66		Sig
	Shooting from the long jump	3.89	0.34	5.57	0.87	4.56		Sig

The value of the tabular T at the degree of freedom (19) and the level of significance (0.05) is equal to (2.09)

Table (6) shows that there is a statistically significant difference between the experimental and control research groups for the post-measurement at the level of significance (0.05) and the degree of freedom (38) and in favor of the experimental group, when the value of the tabulated T is (2.02), which indicates the presence of a significant difference, and is due to The reason is the effectiveness of the cognitive acceleration strategy, which helped learners accelerate their learning and invest time and effort in the specified learning period. The researchers also explain this superiority and the distinction of the experimental group that implemented the educational curriculum using the cognitive acceleration method from the control group that used the traditional teaching method followed in the process of teaching basic skills. With handball, the superiority of using

the cognitive acceleration strategy was demonstrated, and that reason is “gaining experience as a result of the interaction between the learner and the program in the absence of the teacher” (Abdel Hamid Sharaf, 2000) [4]. This is what Al-Diwan confirmed, stating that it is “a type of self-learning program in which learners move from one framework to another in the same order, but each learner works at his own pace, and the educational material must be prepared and prepared in special numbers and presented in a picture (Lamia Hassan Al-Diwan, 2009) [5] and also because of “the use of a program and procedures that together form a program in self-learning, that is, developing a possible plan for coordinated action or a series of pre-prepared operations to form a single integrated educational process that serves the learner to achieve specific behavioral goals” (Salman Ashour Al-Zubaidi, 1997) [6]

Table 6: It shows the arithmetic means, standard deviations, and the tabular and calculated T-value for the post-test for the control and experimental groups in the studied variables.

Groups	Test	Control group		Experimental group		Calculated t value	Tabular value	Sig
		Mean	Standard deviation	Mean	Standard deviation			
Control group	Caught the ball	7.46	1.49	7.10	1.12	0.96	2.02	Non sig
	Shoulder level pass	9.98	1.23	8.34	1.13	2.63		Sig
	The drum in a straight line is 30 m	10.99	1.99	9.50	1.23	1.68		Non sig
	Shooting at shoulder level	12.89	2.78	11.35	2.24	2.59		Sig
	Shooting from the long jump	4.24	0.11	5.57	0.87	2.78		Sig

The tabulated (t) value at the degree of freedom (38) and the level of significance (0.05) is equal to (2.02)

Conclusion

In light of the results obtained, the researchers concluded that using the cognitive acceleration strategy is more effective than the traditional method used in acquiring some basic handball skills.

Conclusion

In light of the results of the study and the scientific facts, the researchers summarized it with several conclusions, which are.

- The two research groups (control and experimental) have achieved progress in the variables investigated, but in varying proportions.
- The results showed that the members of the experimental group, which learned with the cognitive acceleration strategy, outperformed the members of the control group, which learned with the regular strategy, in the variables under discussion in the thesis.
- The steps followed in accordance with the cognitive acceleration strategy had a distinctive role in adding knowledge and providing an educational environment for the learner that made him advance in the level of thinking and obtain better learning.

Recommendations

In light of the conclusions reached by the researchers, it is recommended that.

- Using the cognitive acceleration strategy to develop other handball skills
- Paying attention to using special exercises in linking and assembling skills for young people.
- Conduct studies of other skills individually using the cognitive acceleration strategy.

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