

The effect of skill exercises based on sensory modeling in learning some basic skills in futsal for fourth-year middle school students.

By

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Abstract

The importance of the research lies in paying attention to modern methods that take into account individual differences among students and choosing the most appropriate curricula and exercises that lead to achieving goals in the least effort and shortest time. The problem of the research lies in the weakness of the basic skills in the game of futsal, and it was found that the educational curriculum followed is a curriculum that does not take into account the learner's representational system by which he receives information or in choosing the representational system in the lesson plan. The objective of the research is to identify the effect of skill exercises based on sensory modeling in learning some basic skills in futsal. The researcher used the experimental method and the researcher followed the design of equal groups. The research sample was middle school students. The main experiment was carried out for the period from (3/3/2022 until 4/21/2022), and its duration was (7 weeks) at a rate of (2) two educational units per week. After completing the experiment, the researcher reached the most important conclusions that the skill exercises used were effective in improving the skill aspect. The most important recommendations were the necessity of introducing teachers to the preference for sensory modeling for students, and developing educational curricula according to the degrees of their representational systems.

Keywords: Skill exercises, sensory modeling, basic futsal skills.

Introduction

The educational process is one of the fields that has received many scientific developments and changes due to 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 is compatible with 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 game.

Futsal is one of the important team sports spread in many countries of the world, and the number of its practitioners increases every day because it is one of the fun games that suit different ages, each according to their capabilities and capabilities. Therefore, it is suitable for both genders. This game has many educational, physical, and skill advantages and characteristics that... It made it different from other games, which made the number of followers of that game begin to increase and it began to compete with games that preceded it for a long time. The method of preferring sensory modeling is one of the cognitive methods that has received the attention of a number of researchers, as it represents the means of

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receiving information from the environment through human sensory mechanisms, and sensory modeling represented by sensations (audio, visual, and motor) are preferences that can be used by the learner in all fields, and it is known that there is no preference for sensory modeling. There is one ideal exercise in teaching sports skills,¹ so the process of choosing exercises depends on the variables and circumstances surrounding the educational process. For this reason, it has become necessary for every teacher to search for modern exercises that take into account individual differences during their application if he seeks success in his work.²

Hence, the researcher believes that the importance of his research stems from (theoretical importance. The importance of the research lies in dealing with an important educational stage, which is the preparatory stage in which there are teenage students within a transitional stage that everyone who researched motor learning was interested in. This research also provides physical education teachers with illustrations of the exercises. Skill exercises prepared according to the preference for sensory modeling with a detailed explanation of each exercise and the method of performing it. (The practical importance of the subject teacher's application of the skill exercises prepared according to the preference for sensory modeling on the research sample. It has provided physical education teachers with a mechanism for applying these exercises in order to help them in teaching basic skills tomorrow. Provide halls for students.

Research problem

The process of teaching basic skills in sports is a difficult matter, because the person in charge of the educational process needs to know many things about the sample to be taught in terms of individual differences between them, the type of game they play, and the details of the skills specific to that game, as well as the many variables that affect the learning process. . Through the researcher's experience in the field of futsal, he found that one of the reasons for the weakness of basic skills in futsal is that the educational exercises used in physical education lessons are traditional exercises that do not take into account individual differences between learners, and that learners may differ in their sensory preferences, as People with an (auditory) preference differ from those with a (visual) preference and those with a (kinesthetic) preference. Therefore, the researcher believes that preparing skill exercises to learn the basic skills of futsal must take into account the sensory preference of the learner with which he receives information. In view of the above, the researcher wanted to study this problem, which can be summarized in the following question: Are the skill exercises prepared according to preference modeling? Sensory influence on learning some basic skills in futsal.

Research objectives

1. Preparing a set of skill exercises according to sensory modeling in learning some futsal skills for fourth year middle school students.
2. Identifying the effect of skill exercises according to sensory modeling in learning some futsal skills for fourth-year middle school students.

Research hypothesis

1. There are statistically significant differences between the pre- and post-tests regarding the effect of preferring sensory modeling (auditory, visual, motor) in learning some basic futsal skills for middle school students (fourth grade) and for the three experimental groups.

2. There are statistically significant differences between the best system for each of the three experimental groups in learning some basic futsal skills for middle school students (fourth grade).

Research field

- Human field: Fourth grade of middle school (Abdul Rahman Bin Auf Secondary School - Baqubah).
- Time period: for the period from (2/24/2022) to (4/24/2022).
- Spatial field: Abdul Rahman Bin Auf Secondary School yard for boys.

Research Methodology

Choosing the appropriate approach to the nature of the research problem and its objectives is one of the necessary requirements in scientific research, as the researcher used the experimental method because it suits the nature of the problem to be solved.

Research population and sample

The process of selecting the sample is closely linked to the nature of the research from which the sample is taken: "It is the model on which the researcher conducts the entirety and focus of his work" ³. The research sample was intentionally chosen (Abdul Rahman Bin Auf Secondary School / Fourth Literary Grade - Division A - B - C), and it numbered (38) students for the academic year (2021 - 2022) and was divided into three experimental groups as shown in Table (1).

Table 1. Shows the numbers of sample students in the experimental groups and their percentages

Distribution of groups	Number of students	Sample number	Excluded common system	Percentage
Experimental group (1) auditory	13	10	1	34.21%
Experimental group (2) visual	11	10	3	28.94%
Experimental group (3) locomotors	14	10	4	36.85%
Total	38	30	8	100%

Means of collecting information, tools and devices used in research

Methods of collecting information used in the research

- Arab and foreign sources .
- References.
- Testing and measurement.
- Data compilation lists.
- Statistical methods.
- Exploratory experiments.

Tools and devices used in research

- Futsal field, futsal balls.
- Small goals (1 m x 1 m).
- Digital camera (NEKON).
- Laptop computer (DELL).
- Manual calculator (CASIO).
- Canadian-made FOX whistle.
- Pens Plastic signs.
- Measuring tape.
- Colored adhesive tape.
- Ropes to divide the goal.

Define search variables

After reviewing the researcher's many scientific sources and previous studies related to the topic of his research, the researcher identified the most important basic skills in futsal football according to the Ministry of Education's curriculum ⁴.

Test specifications

Rolling 5

- Test name: Rolling the ball between (7) landmarks. The distance between one landmark and another is (1.5 m). The purpose of the test: to measure the tester's ability to control the ball while running with it between the blocks.
- As for the tools, they are: (1 futsal ball), (7) markers, a stopwatch, an area of the field in which (7) markers are placed in a straight line, the distance between one marker and the next (1.5m), and the distance between the starting line and the first marker (2m).
- Description of the performance: The tester stands with the ball on the starting line, and when the start signal is given, the tester moves the ball quickly between the markers until it reaches the last marker, circling around it and returning to the starting line in the same way. The player has the right to use both feet.
- Performance conditions: The tester can start by passing the first mark from the right or left. The player's movement must not stop during the test. The tester calculates the time to the nearest second from the moment he is given the start signal until he returns to the starting line again.

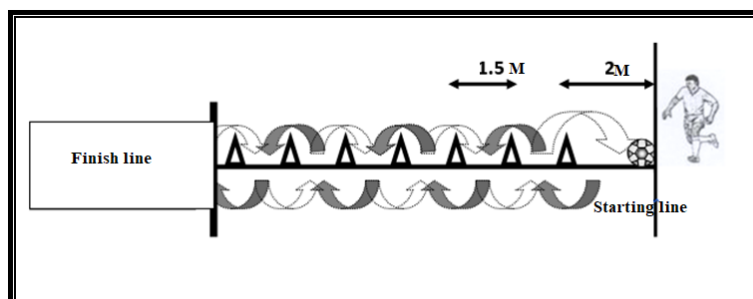


Figure 1. Shows the zigzag running test with the ball (rolling)

Handling 6

- Test name: Manipulation test towards a small target (1 x 1 m) from a distance of (8 m).
- The purpose of the test: to measure handling accuracy.

- As for the tools, they are: (5 indoor football balls, a measuring tape, and an area of the indoor football field).
- Description of performance: The tester stands with the ball at a distance of (8 m) from the target, and upon hearing the signal, he handles the ball while it is stationary towards the target, as in Figure (2).
- Performance conditions: The test begins with ball (1) and ends with ball number (5). The tester is given (5) attempts.
- Registration method
 - Three marks are awarded to the laboratory for a successful attempt when the ball enters directly into the goal.
 - Two marks are credited to the laboratory for an attempt in which the ball touches the crossbar or the goalposts and enters the goal.
 - One score is credited to the laboratory for an attempt in which the ball touches the crossbar or the goalposts and does not enter the goal.
 - The laboratory will receive zero marks for the failed attempt.

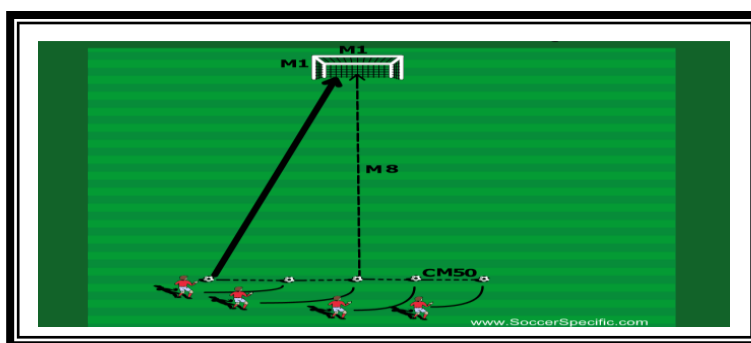


Figure 2. Shows the handling accuracy test

Putting out 7

- Test name: Ball suppression test (bottom of the foot).
- The purpose of the test: to measure accuracy in stopping the ball and regaining control of it under the foot with a square measuring (1.5 m).
- As for the tools, they are:
 - Futsal balls (5).
 - An area defined by two parallel lines (8 m apart).
- Description of the performance: The tester stands behind the line of the designated testing area, and the teacher stands with the ball on the line drawn on the opposite side. After giving the start signal, the teacher pushes the ball on the ground (a creeping floor) toward the tester five times in a row for the purpose of dampening it with the bottom of the foot, as in the figure (3).
- Performance conditions: If the teacher makes a mistake in kicking the ball or pushing it into the laboratory inappropriately, the attempt will be repeated. The attempt will not be considered valid in the following cases: -
 - If the tester does not succeed in stopping the ball and it leaving the square.
 - If he stops the ball in a way that violates the agreed-upon suppression (with the bottom of the foot).
- Registration method:
 - Two marks are given for each correct attempt and the ball not leaving the square.
 - One score is given for every correct attempt and the ball stops on one of the square lines.
 - A zero is given for a wrong attempt and the ball leaving the square.

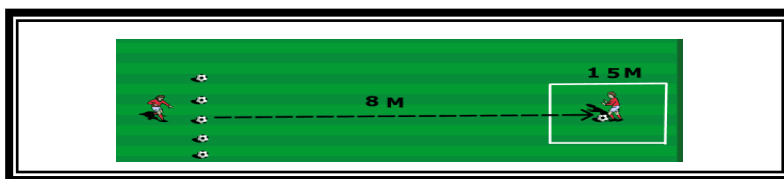


Figure 3. Shows the damping test on the bottom of the foot

- Test name: Target scoring test divided into overlapping squares.
- Purpose of the test: To measure the accuracy of aiming at the target.
- Tools: (5) footballs (for futsal). A banner placed on the futsal goal. Its dimensions are (3 x 2 m). There are four overlapping squares inside it. The first (1.5 x 1.5 m), the second (2 x 2 m), and the third (2.5 m). x2.5 m) Fourth (3x3 m)
- Description of the performance: - (5) balls are placed in different places and set at a distance of (10 m) from the target. The tester scores in the areas indicated in the test according to their importance and difficulty, in a sequential manner, one after the other. The distance between one ball and another is (50) cm, and the tester is given one attempt. Only, as in Figure (5).
- Registration method: The number of hits that enter the goals is calculated:
 - (4) marks when scoring in field No. (4). (3) marks when scoring in field No. (3).
 - (2) Two marks for scoring in field No. (2). (1) One mark for scoring in field No. (1).
 - (Zero) outside the target limits.

Scoring 8

- Test name: Target scoring test divided into overlapping squares.
- Purpose of the test: To measure the accuracy of aiming at the target.
- Tools: (5) footballs (for futsal). A banner placed on the futsal goal. Its dimensions are (3 x 2 m). There are four overlapping squares inside it. The first (1.5 x 1.5 m), the second (2 x 2 m), and the third (2.5 m). x2.5 m) Fourth (3x3 m)
- Description of the performance: - (5) balls are placed in different places and set at a distance of (10 m) from the target. The tester scores in the areas indicated in the test according to their importance and difficulty, in a sequential manner, one after the other. The distance between one ball and another is (50) cm, and the tester is given one attempt. Only, as in Figure (5).
- Registration method: The number of hits that enter the goals is calculated:
 - (4) marks when scoring in field No. (4). (3) marks when scoring in field No. (3).
 - (2) Two marks when scoring in Field No. (2). (1) One mark when scoring in Field No.

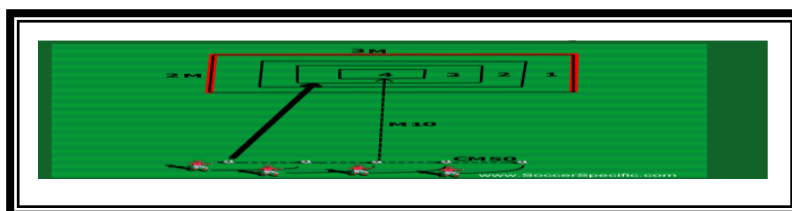


Figure 4. Shows the scoring test

Applying the research experience

Pre-test

The pre-tests for the research sample were conducted on (Sunday) corresponding to (2/27/2022) in the courtyard of Diyala Preparatory School for Boys. The researcher established

the conditions, the method of conducting the tests, and the assistant work team in order to achieve the same conditions as much as possible when conducting the post-tests.

The main experiment

The main experiment for the research sample was conducted on (Thursday), corresponding to (3/3/2022), and was completed on (Thursday), corresponding to (4/21/2022), on members of the experimental groups, at a rate of two units per week, on days (Sunday - Thursday), for a period of (7) weeks, and the total number of educational units reached (14) educational units. In the experiment, the researcher used a set of skill exercises according to sensory modeling, which are performed in a way that suits the nature of the game and the level of the sample. There are (28) exercises for each skill (7 exercises), and the researcher's work was limited to the part The head for the (main) aspect of the educational units is (25) minutes, and the rest of the time is left to the teacher, whose time is (20) minutes. The time for each exercise is (4 minutes) and one minute of rest.

Post-tests

The researcher deliberately conducted the post-tests after completing the educational curriculum and its units amounting to (14) units on (Sunday) corresponding to (4/48/2022), taking into account all circumstances, conditions, and pre-test procedures.

Results and discussion

Presenting and analyzing the results of the basic skills tests in futsal in the pre- and post-tests for the three experimental groups and discussing them.

Table 2. Shows the statistical description of the pre- and post-tests for the three experimental groups in the rolling test

Groups	Tests	Sample size	mean	STDEV.
The first experimental group	Pretest	10	26.423	2.879
	Posttest	10	24.111	3.361
The second experimental group	Pretest	10	26.125	4.249
	Posttest	10	20.653	3.293
The third experimental group	Pretest	10	26.131	3.679
	Posttest	10	20.370	2.619

Table 3. Shows the differences of the means, standard deviations, and the t-value calculated for the pre- and post-tests for the three experimental groups in the rolling test

Paired Samples Test								
S	Groups	Units	mean diff.	STDEV diff.	Differences	(t) value	Error rate	Indication
1	The first experimental group		2.321	1.427	0.451	5.120	0.001	Sig.
2	The second experimental group	Sec.	5.472	1.930	0.610	8.963	0.000	Sig.
3	The third experimental group		5.761	1.234	0.390	14.753	0.000	Sig.

Under degrees of freedom n -1 = 9

Table 4. Shows the statistical description of the pre- and post-tests for the three experimental groups in the handling test

Groups	Tests	Sample size	mean	STDEV.
The first experimental group	Pretest	10	2.700	1.567
	Posttest	10	4.300	1.159
The second experimental group	Pretest	10	3.100	1.286
	Posttest	10	6.900	1.852
The third experimental group	Pretest	10	2.900	2.024
	Posttest	10	7.500	2.368

Table 5. Shows the differences of the means, standard deviations, and the t-value calculated for the pre- and post-tests for the three experimental groups in the handling test

Paired Samples Test								
S	Groups	Units	mean diff.	STDEV diff.	Differences	(t) value	Error rate	Indication
1	The first experimental group		1.600	1.427	0.451	9.798	0.000	Sig.
2	The second experimental group	Degree	3.800	0.918	0.290	13.103	0.000	Sig.
3	The third experimental group		4.600	0.843	0.266	17.250	0.000	Sig.

Under degrees of freedom n -1 = 9

Table 6. Shows the statistical description of the pre- and post-tests for the three experimental groups in the suppression test

Groups	Tests	Sample size	mean	STDEV.
The first experimental group	Pretest	10	2.700	1.337
	Posttest	10	3.800	1.229
The second experimental group	Pretest	10	2.600	0.966
	Posttest	10	5.200	1.229
The third experimental group	Pretest	10	2.700	1.828
	Posttest	10	6.900	2.183

Table 7. Shows the differences of the means, standard deviations, and the t-value calculated for the pre- and post-tests for the three experimental groups in the suppression test

Paired Samples Test								
S	Groups	Units	mean diff.	STDEV diff.	Differences	(t) value	Error rate	Indication
1	The first experimental group		1.100	1.197	0.378	2.905	0.017	Sig.
2	The second experimental group	Degree	2.600	0.843	0.266	9.774	0.000	Sig.
3	The third experimental group		4.200	0.918	0.290	14.453	0.000	Sig.

Under degrees of freedom n -1 = 9

Table 8. Shows the statistical description of the pre- and post-tests for the three experimental groups in the scoring test

Groups	Tests	Sample size	mean	STDEV.
The first experimental group	Pretest	10	4.900	1.370
	Posttest	10	7.400	1.429
The second experimental group	Pretest	10	4.900	2.424
	Posttest	10	9.400	2.756
The third experimental group	Pretest	10	4.300	0.948
	Posttest	10	11.500	1.354

Table 9. Shows the differences of the means, standard deviations, and the t-value calculated for the pre- and post-tests for the three experimental groups in the scoring test

Paired Samples Test								
S	Groups	Units	mean diff.	STDEV diff.	Differences	(t) value	Error rate	Indication
1	The first experimental group		2.500	2.527	0.799	3.128	0.000	Sig.
2	The second experimental group	Degree	4.500	1.649	0.521	8.637	0.000	Sig.
3	The third experimental group		7.200	1.751	0.553	13.002	0.000	Sig.

Under degrees of freedom $n - 1 = 9$

Table 10. Shows the means, the learning percentage, the sequence of groups, and which is best in the post-tests for the three experimental groups

Basic skills	Groups	mean		Learning rate	Best group sequence
		Pretest	Posttest		
Rolling	First experimental	26.423	24.111	9.62%	Third
	Second experimental	26.125	20.653	20.94%	Second
	Third experimental	26.131	20.370	28.28%	First
Handling	First experimental	2.700	4.300	37.20%	Third
	Second experimental	3.100	6.900	55.07%	Second
	Third experimental	2.900	7.500	61.33%	First
Putting out	First experimental	2.700	3.800	28.94%	Third
	Second experimental	2.600	5.200	50%	Second
	Third experimental	2.700	6.900	60.86%	First

Scoring	First experimental	4.900	7.400	33.78%	Third
	Second experimental	4.900	9.400	47.87%	Second
	Third experimental	4.300	11.500	62.60%	First

The table above shows that the values of the means for the pre-test of the three experimental groups in basic skills in futsal football are completely different from the post-test, as it was shown that the value of (t) calculated for each skill under investigation for the first experimental group, respectively, is (5.120, 9.798, 2.905, 3.128).

Since the error rate is smaller than the level of significance (0.05), this means that there are significant differences between the pre-test and the post-test, in favor of the post-test. We find that all the skills under study recorded a good rate of development. The rate of development in rolling reached a rate of development of (9.62%) and handling reached The rate of development reached (37.20%), and the suppression rate reached a rate of development (28.94%). As for scoring, it recorded a rate of development that reached (33.78%), while the value of (t) calculated for the second experimental group reached for each skill under study, respectively (8.963, 13.103, 9.774, 8.637) and since the error rate is smaller than the significance level (0.05), this means that there are significant differences between the pre-test and the post-test, in favor of the post-test. We find that all the skills under study recorded a good rate of development. The rate of development in rolling reached a rate of development of (20.49%). Handling reached a development rate of (55.07%), suppression reached a development rate of (50%), and as for scoring, it recorded a development rate of (47.87%), while the value of (t) calculated for the third experimental group reached (14.753) for each skill under study, respectively. (17.250, 14.453, 13.002) and since the error rate is smaller than the level of significance (0.05), this means that there are significant differences between the pre-test and the post-test, in favor of the post-test. We find that all the skills under study recorded a good rate of development. The rate of development in rolling reached a rate of development. (28.28%), handling reached an improvement rate of (61.33%), suppression reached an improvement rate of (60.86%), and as for scoring, it recorded an improvement rate of (62.60%).

The researcher attributes these differences to the method he adopted in constructing the skill exercises according to sensory modeling within the framework of the educational units and throughout the period of implementation of the components of this curriculum by the experimental group, and the continuous guidance by the teacher in motivating the students in implementing these exercises while working to correct errors in The method of repeating with precisely programmed repetitions commensurate with the students' abilities at this stage and originally placed in the unit to be implemented by the sample contributed to the positive effects on the level of students' improvement in basic skills in futsal. The researcher also attributes this result to the skill exercises according to the sensory modeling that was developed before.

The researcher conducted the study in a scientific and precise manner, avoiding randomness to suit the level of the sample members, giving appropriate rest between exercises, as well as showing an atmosphere of fun and enjoyment during the performance.⁹ "Skill exercises according to the learners' abilities motivate them to redouble their efforts to compete with themselves on the one hand or with others on the other hand, and it is considered a reinforcement element that shows excitement in learning and behavior, and practicing the skill according to the abilities is one of the methods that increases the arousal of motivation." The learner is one of the important principles that makes practicing motor skills better in the lesson"

¹⁰. “Explaining the technical aspects of motor skills, the direction of their path, and their motor divisions helps bring these skills closer to the learner’s awareness and mind” ¹¹. The learner acquires the visual perception of the new motor skill correctly, as presenting the model is one of the most important means used, provided that the presentation is correct by him” ¹².

“The structure of sports activities and events in the lesson plan must be consistent with the nature of each sense and facilitate learning in its own way and style. Visual information should not be presented with verbal descriptions, nor should audio information be limited to a visual scene. Therefore, it is better to expand the mechanism of presenting information between audio and visual information. And movement in order to activate all the senses in performance” ¹³.

The researcher believes that the skill exercises were prepared in a manner appropriate to the age stage of the study sample. “Despite everything that the curriculum is expected to provide, it is linked to the age level of the students. Hence, the flow of the curriculum, its interconnectedness, and its sequence across the age stages must be a tight and clearly defined sequence for each year or stage.” It is prepared for what follows, according to strong methodological standards” ¹⁴. Changing the nature of the exercise, the way it is performed, or its purpose helps in increasing the fun and entertainment when performing, which encourages students to turn to learning, “The conditions for the success of learning basic skills are that the exercises be varied and entertaining.” It involves change and expression and is not repeated in the same form and method, as natural change has an impact on students’ interest in learning” ¹⁵. Repetition in exercises had an important and direct impact on developing skills, because repetition leads to correcting the path of motor performance to reach the best achievement, “learning escalates through repetition, and this repetition corresponds to awareness of the correct path.” Until the learner reaches the highest value or achievement” ¹⁶.

The results of the learners with the sensory-motor system were better than the audio-visual system. The researcher attributes this improvement to the fact that the learners with the sensory-motor system are the best groups in receiving information, The practical application of motor performance is important. It is one of the best educational methods used when teaching any motor skill, and the actual participation of the learner in trying to perform a movement gives him some experience of the real motor work, that is, the feeling of the work and the feeling of control over the body when performing it” .

Conclusions

1. The skill exercises used were effective in improving the basic skills of the three experimental groups (auditory, visual, and motor).
2. The way the model presents the skills contributed greatly to learning the visual group because the learner’s view of the skill helps him know the path of movement and the correct sense of the skill.
3. The practical application of motor performance is one of the best educational methods used when teaching any motor skill.
4. Motor skills are learned through attention and repetition many times and over a long time, and this is the direct cause of motor group learning, and repetitions in performing exercises have an important impact in correcting the course of motor performance to reach learning.
5. The diversity and progression in preparing exercises from easy to difficult has a direct impact on learning the skills under research.

Recommendations

1. The necessity of introducing teachers to the preference for sensory modeling for students, and developing educational curricula according to the degrees of their representational systems.
2. Conducting a study similar to the current study on female students.
3. Applying the research variables to other samples and to different groups (girls, boys) and to the primary and middle school stages to determine the differences between both sexes in the results and the differences in their cognitive styles.

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