The effect of an educational program with visual effects on the development of perceptual, motor compatibility and accuracy of basketball shooting for deaf students

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ABSTRACT

The research aimed to identify the effect of the educational program with visual effects in the development of perceptual perception, motor compatibility, and accuracy of basketball shooting for people with hearing disabilities. The researchers used the experimental method with the experimental design of a sample of 16 students divided equally into two experimental and controlled groups representing the Institute of Al Amal. The researchers used scientific research tools, appropriate tools and devices, conducted a mini-reconnaissance experiment, and then conducted a pre-test. The application of educational units lasted eight weeks, with three units per week. After the completion of the implementation of the method was conducted, the dimensional tests were carried out. Data were extracted and processed statistically and then presented, analyzed, and discussed. The researchers came up with several conclusions. The most important of which is that the use of visual effects in educational units effectively influenced the development of sensory perception, motor compatibility, and accuracy of basketball shooting in the members of the experimental group. Also, visual effects play a role in the purification of the performance skills and the development of accuracy, as it provided opportunities for the student to realize the distance of performance and time, which led the player to correct the performance and prevent mistakes. The researchers recommended the need to emphasize the introduction of visual effects in the educational curriculum, basketball, and the development of mental processes and motor compatibility for students with hearing disabilities, as well as emphasizing the adoption of these effects in the exercises of the hearing impaired to develop the motor compatibility in a way that coincides and develops the accuracy of their performance of basic skills in basketball.

Keywords: deaf students, educational program, basketball

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Introduction

Basketball is a group game that is characterized by the availability of several abilities, including physical, motor, mental, and other skills, which have a big and important role in achieving the best ideal performance for players. It has developed the level of technical performance and accuracy of the player’s skills needed for this game, including shooting skills that require the players and coaches in the training process to take into account. A lot of abilities and requirements that contribute to the continued development of these abilities is the sensory perception of the importance of this ability in the way the player deals with the ball or with the opposing player and a fellow player, as well as his
sense of where to implement the skill, time, and strength, and the availability of motor compatibility. One of the requirements of playing basketball is to deal with different situations of play with fast and sound thinking, which requires players to possess perceptual perception, as perceptual-kinetic and motor compatibility play an active role in the proper application of the performance of their skills in different parts of their body because the processes of sensation and cognition depend on the accumulation of experience and information through theoretical knowledge and practice that leads to the isolation of insignificant stimuli and the acquisition of good compatibility, which qualifies the player to achieve the best performance in the skill of shooting.

Visual effects are an important learning tool that depends on the sense of sight as the main source of learning, through which direct sensory experiences are acquired. It also enables the learner to understand and interpret events visually. This positively affects aspects of his learning and communication with others and increases the importance of visual effects for individuals with hearing disabilities, as it is one of the components of the effectiveness of the visual product in particular and the educational attitude in general. It also contributes to the process of organizing the knowledge structure in the memory of the learner. This process is evident by linking the old information stored in memory and the new related information. This organization is key to retrieving information from the learner’s memory and using it in educational situations. All of this contributes to providing time and effort, improving the quality and continuity of learning, and raising the learner’s motivation to learn it to achieve the desired goals.

Therefore, this research’s importance is reflected in the use of visual effects by the educational program and its experimentation with a group of people with hearing disabilities to see how it affects by developing the level of perception, motor compatibility, and accuracy must be enjoyed when performing basketball shooting.

Research Problem:

Through the researchers’ observation and experience in basketball, they found clear importance in studying the levels of perception, motor compatibility, and accuracy of correction in students of the Institute of Al Amal for Hearing Impairment. This resulted from the lack of introduction or use of educational methods that work to develop these abilities. Most of the exercises may lack these means, as well as their implementation is either by balls or by almost normal means, which is less useful in developing the student’s sense of awareness of the surroundings in which he works, as well as a weakness in the player’s motor compatibility with the lack of arousal and motivation towards the training process.

The idea for the study was an attempt to highlight the importance of educational means or their introduction in the training process, particularly with students of the Al Amal Institute of Auditory Impairment. It is important in developing the accuracy of the skilled performance of correction, which depends largely on sensory perception and motor compatibility.

Objectives:

1-Preparing an educational program with visual effects in the development of perceptual perception, motor compatibility, and accuracy of basketball correction for deaf students

2-Knowing the impact of the educational program with visual effects in the development of perceptual perception and motor compatibility of deaf students

3-Determining the effect of an educational program with visual effects on the accuracy of basketball shooting for deaf students

Hypotheses:
1 - The educational program has a positive impact on the development of perceptual and motor compatibility for students with hearing impairment.

2 - The educational program has a positive impact on the development of the accuracy of basketball shooting for students with hearing impairment.

**Research Areas**

1-5-1 Human field: Students of the Institute of Al Amal (14-16) year-olds of the sixth stage.


1-5-3 Spatial field: Sports stadiums at The Institute of Al Amal.

**Research Methodology and Field Procedures**

**Research Methodology:**

The researcher adopted the experimental approach by designing equal groups to suit the nature of the research.

**Research community and sample:**

The research community is made up of 30 students between 14 to 16 years of age. Sixteen students were selected to represent the research sample divided equally into two control and experimental groups, with the percentage of the research sample being 53.333%.

**The homogeneity of the sample and the parity of the two research groups**

**The homogeneity of the sample members:** Researchers performed the homogeneity of the members of the sample in the light of the following variables: time, age, height and weight - state of hearing, to adjust the research variables as shown in Table 1.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Torsion coefficient</th>
<th>Pattern</th>
<th>standard deviation</th>
<th>arithmetic media</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifetime / Year</td>
<td>0.19</td>
<td>15</td>
<td>0.54</td>
<td>14.56</td>
<td></td>
</tr>
<tr>
<td>Length / cm.</td>
<td>0.86</td>
<td>166</td>
<td>4</td>
<td>167.86</td>
<td></td>
</tr>
<tr>
<td>Weight / kg</td>
<td>0.54</td>
<td>67</td>
<td>3</td>
<td>68.6</td>
<td></td>
</tr>
</tbody>
</table>

All students have a hearing loss higher than 70 dB

The results of Table 1 show that the values of the torsion coefficient range from (±2). This indicates that the data is free from defects of non-moderate distributions, i.e., the research sample’s homogeneity.

**Equality of the two research groups:**

Prior to the application of the research experiment, the researchers conducted the equivalence of the two research groups in some of the tests under investigation, as shown in Table 2.
Table 2 shows the arithmetic median, standard deviations, and test results (t) calculated between the control and experimental groups in some of the pre-test tests in question.

<table>
<thead>
<tr>
<th>Type of significance</th>
<th>Value (t) Calculated</th>
<th>Experimental</th>
<th>Control</th>
<th>Statistical parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non - moral</td>
<td>0.22</td>
<td>1.86</td>
<td>3.88</td>
<td>1.89</td>
</tr>
<tr>
<td>Non - moral</td>
<td>1.12</td>
<td>0.13</td>
<td>0.68</td>
<td>0.13</td>
</tr>
<tr>
<td>Non - moral</td>
<td>0.52</td>
<td>1.28</td>
<td>8.08</td>
<td>2.41</td>
</tr>
<tr>
<td>Non - moral</td>
<td>0.22</td>
<td>1.44</td>
<td>8.22</td>
<td>1.34</td>
</tr>
<tr>
<td>Non - moral</td>
<td>0.32</td>
<td>1.21</td>
<td>3.58</td>
<td>1.12</td>
</tr>
</tbody>
</table>

The results of Table 2 show that the calculated T-values are smaller than their tabular value of 2.16 at the level of 0.05 and below the degree of freedom (14). This indicates the equivalence of the two research groups in some tests under consideration.

**Devices and Tools Used**

**Research Methods:**

The researchers used the following research methods: Arab and foreign sources, tests, measurement, observation, interview, and questionnaire.

**Tools and Equipment:**

The researchers used the following tools and equipment: measuring tape, adhesive tape, eye ring, legal basketballs (15), people, flags, stopwatch (3), multiple cords, weight measuring device, manual electronic calculator, camera, CD, laptop.

**Determining Search Variables**

**Educational Means**

After reviewing the scientific sources and research related to basketball and sports training (static images - serial images - video - models display - computer - Datacho) were selected as the most suitable visual effects to achieve the goal of the research. The main objective is to develop perceptual and motor compatibility and accuracy of correction. The reason for choosing this skill is the love of competition and the desire to learn. The increase in scoring prompted researchers to choose the skill being motivating and arouse the desire to learn.

**Devices and Tools**

**Tools:**

1. Basketball Court
2. Basketball (10)
3. Person (15)
4. stationery, chalk
5 - tape with metric measurement (50m)
6 - CDs (4)
7 - Flash memory (1 with 8 GB memory)
8 - Flags (4)

**Hardware:**
- Sony (1)
- Display data show
- Lenovo laptop computer
- Electronic stopwatch (4)
- Medical balance to measure the number of mass (1)
- 2 kg medical ball (2)

**Tests of Perception, Motor Compatibility, and Accuracy of Basketball Correction:**

A selection of skill tests for basketball, perception, and motor compatibility have been selected. These tests are approved and used by several researchers in this field.

**First: Perceptual Tests**

A - Perception test by throwing the ball  
B - Perception of time  
C - Horizontal distance perception test  
D - Perceptual perpendicular distance

**Second: Motor Compatibility Tests**

A - Test throwing the tennis ball on the wall and receiving it  
B - Test numbered circuits

**Third: Tests Accuracy of the Forms of Basketball Correction**

A - Free-throw test

**Exploratory Experience:**

The researchers conducted a mini exploratory experiment on a smaller group of the sample, with four of the students coming from the Institute, and outside the basic research sample on 4/4/2018. This experiment was conducted with the help of the sign teacher for several purposes, including:

1 - Ensure the accuracy of data recording  
2 - Know the difficulties faced in the tests and the possibility of avoiding them  
3 - Know the suitability of the devices and tools necessary to perform the tests
4 - Know the time taken to take the tests.

5 - Ensure the team’s understanding of the nature of the tests and how to perform them.

6 - Find the scientific basis for the tests.

**Scientific Basis For the Tests:**


- Mohammed Sobbhi Hassanein, ibid., P. 416.

- Mahmoud Abdel Dayem and Mohammed Sobbhi Hassanein. Ibid., P. 130—131.

Although the physical, motor, and skill tests used in the research are codified, the researchers sought to adopt the scientific basis in the evaluation of the tests by finding the coefficients of honesty and stability of the tests.

**Logical honesty:**

Honesty is one of the most important conditions of good testing, and honesty means “the test should be able to measure the attribute, phenomenon or attribute for which it was developed”. Who acknowledged the validity of its use and to achieve the goal of research.

**Stability:**

Stability means “the degree of accuracy or agreement by which the test measures the phenomenon for which it was established.” Stability coefficient was found for the motor and skill tests of the skills under study by applying them to a sample of six students – four hearing impaired and two deaf – from the research community and outside the main research sample, and re-test on the same sample and under the same conditions after seven days.

Table 3 shows the scientific coefficients of the tests under consideration

<table>
<thead>
<tr>
<th>Objectivity</th>
<th>Stability Coefficient</th>
<th>Honesty Coefficient</th>
<th>Statistical parameter Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>not fit</td>
<td></td>
</tr>
<tr>
<td>0.88</td>
<td>0.94</td>
<td>0</td>
<td>Perceptual perception throwing the ball</td>
</tr>
<tr>
<td>0.89</td>
<td>0.94</td>
<td>0</td>
<td>Time Perception</td>
</tr>
<tr>
<td>0.88</td>
<td>0.89</td>
<td>0</td>
<td>Horizontal Distance Perception</td>
</tr>
<tr>
<td>0.92</td>
<td>0.84</td>
<td>0</td>
<td>Perceptual perpendicular distance</td>
</tr>
<tr>
<td>0.89</td>
<td>0.88</td>
<td>0</td>
<td>Compatibility between the eye</td>
</tr>
</tbody>
</table>
Field Research Procedures

Pre-Tests:
The pre-tests of the research sample were conducted on 24/4/2018 in the yard of Al Amal Sports Institute, with the assistance of the assistant team

Implement the Vocabulary of Training Means
- The experimental group of educational means was subjected to the implementation and application of skill and motor exercises by the researcher.
- The control group followed the method adopted by the institute. The researchers’ duty was to supervise and follow up on the field to implement the vocabulary of the units without intervention.
- The training curriculum took three weeks, with three teaching units per week, bringing the total number of teaching units to 24 units.
- Unit time is 60 minutes (Appendix 3) for some exercises unit

Tests-Post
The post-tests of the experimental and control groups were conducted under the same conditions as the pre-tests of these two skills. These tests were conducted on 2/6/2018.

Statistical means:
- Statistical means included:
  1 - Arithmetic mean
  2 - Standard deviation
  3 - Torsion coefficient
  4 - Simple correlation coefficient (Pearson)
  5 - Percentage
  6 - Two-way contrast analysis by interaction.
  7 - T-Test for two samples of equal number
  8 - T-Test for two unrelated samples equal in number.

Presentation, Analysis, and Discussion of Results
4.1 View the results of perceptual perception tests, motor compatibility, and accuracy of basketball shooting for the control and experimental research groups and analysis

4.1.1 View the results of perceptual perception tests, motor compatibility, and accuracy of basketball shooting for the control research groups and analysis

Table 4 shows the arithmetic media, the standard deviations, and the T-value calculated between the pre- and post-tests in perceptual perception and motor compatibility tests of the control research group.

<table>
<thead>
<tr>
<th>Significance Type</th>
<th>Value (t) Calculated</th>
<th>Pre-tests</th>
<th>Post-tests</th>
<th>Statistical Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moral</td>
<td>3.11</td>
<td>1.28</td>
<td>6.82</td>
<td>perceptual perception by throwing the ball / number</td>
</tr>
<tr>
<td>Moral</td>
<td>2.94</td>
<td>0.89</td>
<td>0.51</td>
<td>Perceptual in time / s</td>
</tr>
<tr>
<td>Moral</td>
<td>3.42</td>
<td>1.22</td>
<td>5.82</td>
<td>perceptual perception in horizontal distance / degree</td>
</tr>
<tr>
<td>Moral</td>
<td>2.86</td>
<td>0.80</td>
<td>5.98</td>
<td>Perceptual perpendicular distance / degree</td>
</tr>
<tr>
<td>Moral</td>
<td>3.28</td>
<td>1.17</td>
<td>8.33</td>
<td>Compatibility between the eye and the arm / number</td>
</tr>
<tr>
<td>Moral</td>
<td>2.92</td>
<td>0.89</td>
<td>6.32</td>
<td>Compatibility between the eye and legs / s</td>
</tr>
</tbody>
</table>

Table 4 showed that the T-values calculated between the pre- and post-tests in the perceptual perception and motor compatibility tests of the control group were greater than their tabular value of 2.45 at the significance level of 0.05 and under the degree of freedom of 7. This indicates significant differences between the pre- and post-tests and in favor of the dimension.

Table 5 shows the arithmetic media, the standard deviations, and the T-value calculated between the pre- and post-tests in Tests of Basketball Scoring Forms for the Control Group.

<table>
<thead>
<tr>
<th>Significance Type</th>
<th>Value (t) Calculated</th>
<th>Pre-tests</th>
<th>Post-tests</th>
<th>Statistical Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morale</td>
<td>3.21</td>
<td>1.24</td>
<td>2.63</td>
<td>Correction from free throw</td>
</tr>
</tbody>
</table>

Table 5 showed that the T-values calculated between the pre- and post-tests in the basketball corrections tests of the control group are greater than their tabular value of 2.45 at the significance level of 0.05 and under the degree of freedom of 7. On the existence of significant differences between the pre and post-tests and in favor of the pre-tests.
View the Results of Perceptual Perception Tests, Motor Compatibility, and Accuracy of Basketball Shooting for the Experimental Research Groups and Analysis

Table 6 shows the arithmetic media, the standard deviations, and the T-value calculated between the pre- and post-tests in the perceptual perception and motor compatibility tests of the experimental research group.

<table>
<thead>
<tr>
<th>significance type</th>
<th>Value (t)</th>
<th>Pre-tests</th>
<th>Post-tests</th>
<th>Statistical parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Calculated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>moral</td>
<td>3.78</td>
<td>1.15</td>
<td>6.34</td>
<td>1.86</td>
</tr>
<tr>
<td>moral</td>
<td>5.29</td>
<td>0.12</td>
<td>0.48</td>
<td>0.13</td>
</tr>
<tr>
<td>moral</td>
<td>6.12</td>
<td>0.95</td>
<td>3.78</td>
<td>1.28</td>
</tr>
<tr>
<td>moral</td>
<td>4.76</td>
<td>0.76</td>
<td>2.21</td>
<td>1.44</td>
</tr>
<tr>
<td>moral</td>
<td>4.08</td>
<td>1.25</td>
<td>9.78</td>
<td>1.21</td>
</tr>
<tr>
<td>moral</td>
<td>4.54</td>
<td>0.34</td>
<td>5.43</td>
<td>1.86</td>
</tr>
</tbody>
</table>

Table 6 showed that the T-values calculated between the pre- and post-tests in the perceptual perception and motor compatibility tests of the experimental research group are greater than their tabular value of 2.45 at the significance level of 0.05 and under the degree of freedom of 7. On the existence of significant differences between the pre- and post-tests and in favor of the post-tests.

Table 7 shows the arithmetic media, the standard deviations, and the T-value calculated between the pre- and post-tests in the basketball shooter tests for the experimental research group.

<table>
<thead>
<tr>
<th>significance type</th>
<th>Value (t)</th>
<th>Pre-tests</th>
<th>Post-tests</th>
<th>Statistical parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Calculated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morale</td>
<td>5.44</td>
<td>1.14</td>
<td>8.32</td>
<td>1.27</td>
</tr>
</tbody>
</table>

Table 7 showed that the T-values calculated between the pre- and post-tests in the tests of basketball corrections forms for the experimental research group are greater than their tabular value of 2.45 at the significance level of 0.05 and below the degree of freedom of 7. On the existence of significant differences between the pre- and post-tests and in favor of the dimension.

View the Results of Tests of the Perceptual Perception, Motor Compatibility Tests, and Accuracy of the Post-Basketball Corrections Between the Control and Experimental Groups

Table 8 shows the arithmetic mean, standard deviations, and the T-value calculated in the post perceptual perception and motor compatibility tests between control and experimental groups.
Table 8 showed that the T-values calculated between the control and experimental groups in the post-tests of perceptual perception and motor compatibility are greater than its tabular value of 2.45 at the level of significance of 0.05 and the degree of freedom of 14. This indicates significant differences between the pre- and post-tests and in favor of the post.

Table 9 shows the arithmetic media, the standard deviations, and the T-value calculated in the accuracy of the corrections post-basketball between control and experimental groups.

<table>
<thead>
<tr>
<th>significance type</th>
<th>value (t)</th>
<th>Experimental</th>
<th>control</th>
<th>Statistical parameters variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Calculated</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Morale</td>
<td>3.11</td>
<td>1.15</td>
<td>6.34</td>
<td>1.28</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.71</td>
<td>0.12</td>
<td>0.48</td>
<td>0.89</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.51</td>
</tr>
<tr>
<td></td>
<td>2.72</td>
<td>0.95</td>
<td>3.78</td>
<td>1.22</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.82</td>
</tr>
<tr>
<td></td>
<td>3.49</td>
<td>0.76</td>
<td>2.21</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.98</td>
</tr>
<tr>
<td></td>
<td>4.65</td>
<td>1.25</td>
<td>9.78</td>
<td>1.17</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td>8.33</td>
</tr>
<tr>
<td></td>
<td>4.04</td>
<td>0.34</td>
<td>5.43</td>
<td>0.89</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.32</td>
</tr>
</tbody>
</table>

Discussion

The results of the tests on perception and motor compatibility and the accuracy of a basketball correction for the control and experimental research groups, seen in tables 4, 5, 6, and 7, showed the existence of significant differences in favor of post-tests for both groups. The researchers attribute this to the group control of the impact of the curriculum adopted in the Ministry’s physical education curriculum and the commitment of students. Regular attendance and continuously performing the skills had a clear role in their development in the variables researched. As sources stressed, “the many repetitions practiced by the player during the practical application help gain performance and scalability.” The skill of aiming in basketball is an important offensive skill, as the injury of the basket is the outcome of the player’s performance and the decisive factor in determining the results of the game, which prompted members of the control group to commit to all the time of the lesson to get accurate scoring.
As for the experimental group whose teaching methods have been introduced, the researchers attribute the moral differences that occurred between the pre- and post-test tests to the existence of sufficient scope to teach and improve the perception, motor compatibility, and accuracy of correction through the use of training and teaching methods in the educational units that are in accordance with the special possibilities of students in the development. Their awareness of distance, time, or space within the stadium, as well as the development of motor compatibility among members of this group, has a clear impact in the development of technical performance and accuracy because “aesthetic performance and its development depends on the development of processes. Perception of the result of the players undergo exercises with training means developing these abilities, which leads to the development of their sense of the ball because the strength of neurological processes results in an increased perception of the external environment.

Tables 8 and 9 also indicated the existence of significant differences in the distance tests between the control and experimental research groups. It showed the experimental group’s superiority. The researchers attribute this to the effect of the teaching and training methods introduced in the training units, which contributed to perceptual perception development. This, in turn, led to the success of the student in his skill performance, as “the sense of motor lead to the athlete to succeed in his movements, and gives the ability to discover the new tactic, and the ability of motor compatibility.” In addition, perceptual perception has a direct impact on the development of skill performance and accuracy and the acquisition of new skills, as well as play situations, especially when scoring need to use the senses of touch and sight and some internal sensations, such as the sense of direction and distance and a sense of time, more than any other senses that provided players with broad horizons in recognizing the largest range of variables surrounding performance.

The results also showed the superiority of the experimental group in the tests of motor compatibility. This is what the teaching methods that develop motor compatibility through which is associated with many other physical and motor abilities such as speed, agility, balance and accuracy, as “the link shows the compatibility of speed in the requirements of motor performance in terms of agility, balance and accuracy of movement requirements, both spatially and formally, i.e. moving the body and its parts with the precision required during a vacuum.

In the results of the accuracy of the basketball correction, the researchers found that the experimental group has also excelled. They attribute the reason for that correction to the idea that it is one of the motor skills that require great accuracy in training and that the group’s performance requires high coordination of mental and motor and neuromuscular compatibility and precision. This has demonstrated the role of teaching aids in the accuracy of the performance of the players in this group because accuracy is “an important requirement depends on winning, it is the desired goal in the performance to score points, if measured by the outcome of the rapid performance of the strong performance is useless if lack of accuracy.” This is what the researcher went to fulfill his hypotheses.

Conclusions and Recommendations:

Conclusions
1. The use of teaching and training means in the units effectively influenced the development of perceptual perception, motor compatibility, and accuracy of basketball correction among the members of the experimental group.

2. The curriculum prepared by the teacher of the Institute has a positive role and significance in the development of perceptual and motor compatibility and accuracy of correction basketball among members of the control group.

3. The experimental group achieved a great superiority over the control group in the tests of perception, motor compatibility, and accuracy of scoring in basketball.

**Recommendations:**

1. The need to emphasize the introduction of educational and training means in the curriculum used in the institutes of Al Amal to develop mental processes and motor compatibility.

2. The need for the teacher’s attention in developing perceptual-motor compatibility and other motor capabilities of students of the Institute.

3. The need to pay attention to the perceptual training during sports lessons and identify the perceptual variables pertinent to the basketball game and work on its development.

4. Conduct studies and research on different age groups and individuals with special needs who can learn and for both sexes in basketball and other sports (collective and individual).

**Sources**


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Appendix 1: Training Methods Used

1 - colored circles on the smooth wall: It is a drawing of colored circles of different measurements. The player performs correction exercises from different distances and directions and works to introduce the ball in them. Its primary function is to recognize the distance of throwing and movement compatibility between the arm and eye.

2 - multiple loops and different heights: It consists of several basket hoops with different heights. The player performs exercises from different distances, directions, and times and correction. Its basic function is to sense of the ball and the perception of throwing distance and develop precision.

3 - ladder: It is a means of several ropes in the form of a ladder (staircase). The player performs exercises and movements of the legs in a way that does not touch the stairs and scores between the stairs. Its primary function is to recognize the horizontal distance between the stairs and the compatibility of the movement between the legs and eyes.

4 - wooden sign: It is a means of a wooden board held by two iron columns and is multi-height. The player performs exercises, scoring, and jumping. Its main function is to recognize the vertical distance by jumping in front of this person and the proficiency and accuracy of the scoring performance.

5 - ropes: - It is a normal rope placed at multiple heights. The player jumps over them, as well as performs exercises between them. Its primary function is to recognize the vertical distance by jumping over it and the development of motor compatibility between the legs and eyes.

6 - Sponge person: It is a means of assistance sponge with a height of 30 cm and 50 cm width. The player jumps over it when performing the scoring, i.e., helping the player jump up and get closer to the basket as much as possible.
### Appendix 2

Among the experts and specialists in the fields of (tests, measurement, sports training, and basketball)

<table>
<thead>
<tr>
<th>Place of Work</th>
<th>Specialization</th>
<th>Name</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Qadisiyah College of Physical Education and Sports Science</td>
<td>Tests and measurement</td>
<td>Dr. Salam Jabbar Sahib</td>
<td>1</td>
</tr>
<tr>
<td>University of Qadisiyah College of Physical Education and Sports Science</td>
<td>Tests and measurement</td>
<td>Prof. Hazem Mousa Abd</td>
<td>2</td>
</tr>
<tr>
<td>University of Basrah College of Physical Education and Sports Science</td>
<td>Tests - basket</td>
<td>Prof. Mustafa Abdel Rahman</td>
<td>3</td>
</tr>
<tr>
<td>University of Baghdad College of Physical Education and Sports Science</td>
<td>Athletic Training - handicapped</td>
<td>Prof. Eman Abdel Amir</td>
<td>4</td>
</tr>
<tr>
<td>University of Baghdad - College of Physical Education</td>
<td>Athletic Training - handicapped</td>
<td>Prof. Ahmed Mohammed Al-Ani</td>
<td>5</td>
</tr>
</tbody>
</table>