



ISSN: 2456-4419

Impact Factor: (RJIF): 5.18

Yoga 2022; 7(2): 197-203

© 2022 Yoga

www.theyogicjournal.com

Received: 01-11-2022

Accepted: 28-11-2022

Dr. Mateen Sulaiman Salih

Assistant Professor, Faculty of
Physical Education and Sports
Sciences, University of Kirkuk,
Iraq

The effect of harmonious exercises to development the sensory-kinesthetic perception and some forms of passing skill for the players of the specialized school in handball

Dr. Mateen Sulaiman Salih

DOI: <https://doi.org/10.22271/yogic.2022.v7.i2c.1382>

Abstract

Harmonious exercises are one of the requirements that the athlete needs at a high level, especially motor abilities exercises, and these abilities help the athlete to integrate several motor skills in an organized and sequential manner, as well as their awareness of the surroundings when performing movements under changing conditions, as happens in handball passing operations, and the importance lies research in the preparation of harmonic exercises to develop sensory-kinesthetic perception and some forms of passing skill for the players of the specialized school.

Regarding the research issue, the researcher's fieldwork led him to observe the absence of harmonic exercises in the training units for the players of the specialised school, despite the fact that these exercises are significant and intricately linked to the execution of fundamental skills that raise performance level. Since the ability of compatibility is one of the key pillars in developing the motor programme and aids players in understanding their surroundings as well as their correct motor and skill performance, it cannot always be ignored, the researcher set out to create harmonic exercises. What increased the importance of the research was the dearth of research and scientific studies for these exercises.

The study's objectives are to prepare harmonic workouts and determine how they affect players from specialised schools' sensory-kinesthetic perception and various types of passing ability.

According to the research's premise, harmonic workouts have an impact on various types of passing ability and sensory-kinesthetic perception in players from the Specialised School.

The researcher adopted an experimental approach to address the research problem in terms of the research methodology and field procedures. There were 28 players from the Specialised School in Kirkuk who made up the research community, who were randomly divided into two equal groups and distributed after preparing harmonic exercises and running exploratory experiments. Following the completion of the pre-tests on the experimental and control research groups, the experimental group engaged in harmonic exercises, while the control group continued to follow the trainer's standard training programme. Eight weeks later, the post-tests were administered, and the data were then processed using the appropriate statistical techniques.

Keywords: Harmonious exercises, sensory-kinesthetic perception

1. Introduction

One of the team sports that is distinguished by the diversity of its fundamental abilities and the interdependence of these abilities among themselves is handball. As a result, a player's success in other skills is badly impacted by his deficit in any particular skill, and experts and coaches must devote a lot of time and effort to selecting players who will excel. Along with physical characteristics, dimensions, and talent. That every sporting activity needs mental-physical requirements and specific motor skills, and sensory-kinesthetic perception is one of those requirements that the athlete needs at a high level, and sensory-kinesthetic perception helps the athlete to perform movements under changing circumstances, as happens in passing and deception in handball, Therefore, the researcher focused on an important aspect in it, which is the harmonious exercises, because they are an important requirement for the success of the mental and skillful side, as they are exercises that give a coherent form and complement each other.

Corresponding Author:

Dr. Mateen Sulaiman Salih

Assistant Professor, Faculty of
Physical Education and Sports
Sciences, University of Kirkuk,
Iraq

The importance of the research lies in the preparation of harmonic exercises to develop sensory-kinesthetic perception and some forms of passing skill for the players of the specialized school.

1.1 Research Problem

As a result, the researcher determined the issue with his research: The lack of harmonic exercises in the training units for the players of the specialised school was noticed by the two researchers through their fieldwork, despite the fact that these exercises are important and are linked to the execution of fundamental skills that raise performance level. Since the ability to harmonise is one of the fundamental building blocks of the motor programme and aids players in understanding their surroundings as well as their correct motor and skill performance, it cannot always be ignored, the researcher set out to create harmonious exercises. What increased the importance of the research was the dearth of research and scientific studies for these exercises.

1.2 Research objective

Preparing harmonic workouts for the players of the specialised school and determining how they affect sensory-kinesthetic perception and various types of passing ability.

1.3 Research hypotheses

For the players of the specialised school, harmonic workouts have an impact on sensory-kinesthetic perception and various forms of passing skill.

1.4 Research fields

1.4.1 The human field: The players of the Specialized School in Kirkuk.

1.4.2 Time field: From 2/8/2022 to 27/10/2022.

1.4.3 Spatial field: The indoor sports hall in Al-Hajjaj.

2. Research methodology and field procedures

2.1 Research Methodology

The researcher had to develop the procedure using two equal groups (experimental and control) with two pre and post tests because the problem's nature required the use of an experimental methodology, which is compatible with the problem's nature.

2.2 Research community and sample

The research community was established in light of the fact that identifying the research community is one of the fundamental components of scientific research. The players of the Specialised School in Kirkuk, numbering 28, were the study participants. They were divided into two equal groups by lottery and randomly after constructing harmonic exercises and doing exploratory trials. Pre-tests are then administered to the experimental and control groups.

2.3 Means of collecting information, data, devices and tools used in the research

2.3.1 Research Methods:

1. Arabic and foreign sources and references.
2. Observation and experimentation.
3. Personal interviews.
4. Testing and measurement.

2.3.2 Equipment and tools used

1. A legal handball court.
2. Legal handballs number (12).
3. Metric tape measure.
4. Colored adhesive tapes.
5. Agility ladder.
6. Chalk.
7. Scale drawing with a length of (1 m).
8. Rings with a diameter of (60) cm.
9. Notebook and pens to record data and notes.
10. Electronic stopwatch.
11. laptop (acer).

2.4 Field research procedures

2.4.1 Tests and measurements used in the research

2.4.1.1 Sensory-motor perception tests

First test is the return passing to a rectangle (170 cm x 75 cm) and the player is blindfolded: (Karim, Zahed Mohsen, 2016, p. 62) ^[1].

The purpose of the test: Orientation perception measure.

Tools: Handball (5), measuring tape, sticky tape, flat wall, blindfold.

Description of performance: The player, carrying the ball, is positioned behind a line, five metres away from the wall, on which a rectangle with the dimensions (170 cm x 75 cm) and 75 cm above the ground has been marked. The ball bounces off the ground and strikes the line that divides the rectangle in half. As depicted in Figure 9. The performance must meet the following requirements:

1. Give the tester only five attempts.
2. Performing passing from behind the throwing line.
3. The attempt in which the tester touches or crosses the throwing line is cancelled.
4. The test is performed with the preferred hand.
5. Blindfolded before each attempt.
6. Giving the start signal three seconds after putting on the player's blindfold.

Evaluation: Evaluation is done on the basis of calculating the amount of error:

- A score (zero) is calculated for the ball that touches the line that bisects the rectangle.
- The amount of error for passing is calculated in case the ball does not touch the line that bisects the rectangle, by measuring the distance in centimeters between the line that bisects the rectangle and the point that the ball touches the wall.

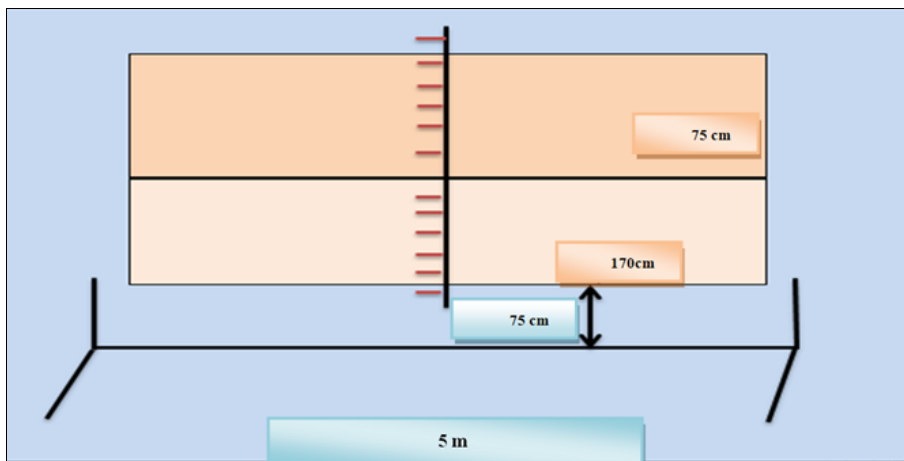


Fig 1: Orientation perception test

- The arithmetic mean of the five trials is calculated.
- Notes / highest score for the test (zero).

The second test: the long passing and the player is blindfolded: (Al-Badr, Naji Mutashar Izzat, 2014, p. 56)^[2]

- **The purpose of the test:** measuring sensory-kinesthetic perception (related to distance).
- **Tools:** a legal handball court, (5) handballs, measuring tape, adhesive tape, and a blindfold.

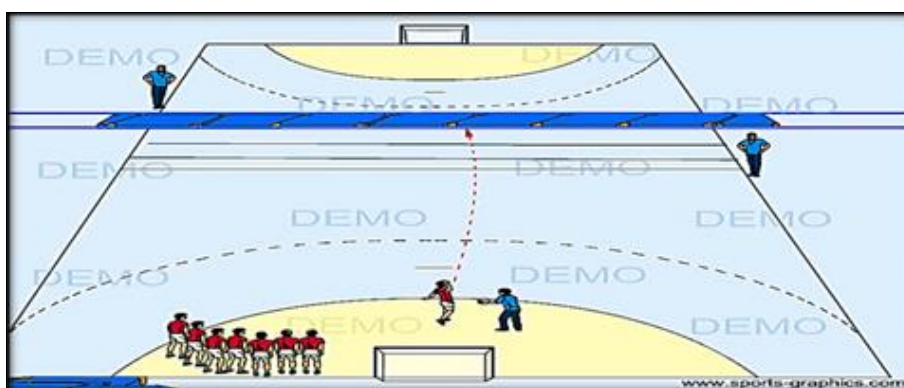
Performance specifications: The player stands inside the (6 m) area while holding the ball in his hand, estimating the distance well, then blindfolding him, and when the start signal is heard, he performs the long passing so that he tries to deliver the ball to the misleading area marked with signs, as shown in the figure (10). The performance shall be according to the following conditions:

1. Give the tester five attempts only.

2. Perform passing from within the 6m area.
3. The test attempt is cancelled if the tester reaches or passes the 6-meter zone boundary.
4. The test is performed with the preferred hand. Blindfolded before each attempt.
5. Giving the start signal three seconds after putting on the blindfold.

Evaluation

- A zero score is calculated if the ball lands in the marked area.
- The degree of error for passing is calculated in the event that the ball does not fall in the shaded area, by calculating the degree of the place (in meters) in which the ball falls.
- The arithmetic mean of the five attempts is calculated.



Notes: best score for the test (zero).

Fig 2: Distance perception test

2.4.1.2 Passing skill forms tests:

The first test: the skill of passing above the level of the head to the overlapping rectangles with handball: (Al-Badr, Naji Mutashar Izzat, 2014, p. 106)^[2]

- **The purpose of the test:** measuring the accuracy of the passing skill performance from the head level with the handball.
- **Tools:** (5) handballs, tape measure, sticky tape, flat wall.

Description of the performance: The following guidelines must be followed while the laboratory does the passing from the level of the head, attempting Injury to the inner rectangular area, as indicated in the above diagram. The laboratory is standing behind a line, nine metres away from

the wall, with the ball in both hands. On the wall, two overlapping rectangles with the measurements (160 cm x 180 cm) and (100 cm x 90 cm) are drawn:

1. Limit the tester to five tries.
2. Passing performance from behind the throwing line.
3. The tester crosses the throwing line, the effort is cancelled.
4. The test is performed with the preferred hand.
5. The ball cannot contact the ground after leaving the tester's hands and before arriving at the flat wall where the two rectangles are drawn.

Registration

- The laboratory will determine two degrees if the ball

strikes the full inside rectangular region.

- If the ball strikes the whole perimeter of the outer rectangle (inside the rectangle or on the lines indicated for the inner rectangle), it counts as one degree for the

lab.

- The laboratory will determine a score of 0 if the ball strikes the ground or leaves the two rectangles.

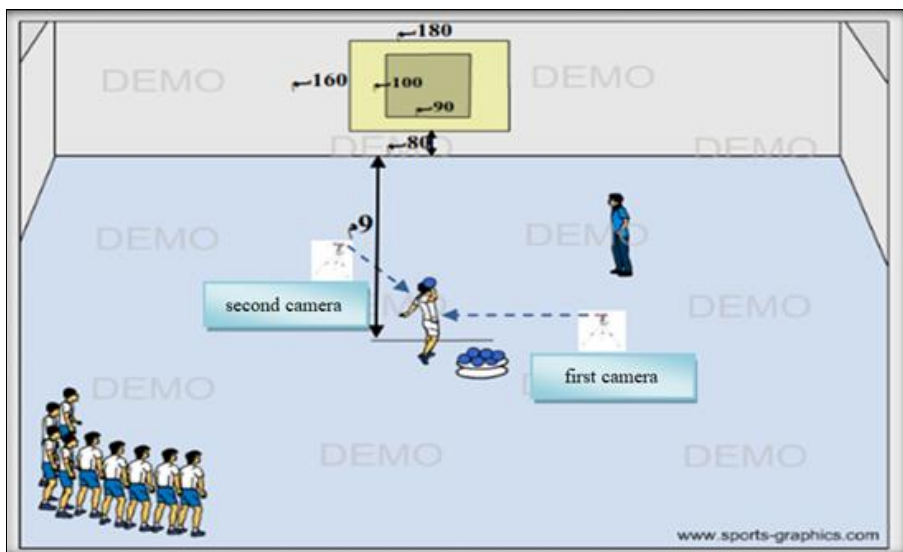


Fig 3: The performance test demonstrates the passing skill above the level of the head to overlapping rectangles with handball

The second test: performing the skill of passing from the level of the head to the overlapping rectangles with handball: ((Al-Badr, Naji Mutashar Izzat, 2014, p. 106) [2])

- **The purpose of the test:** measuring the accuracy of the passing skill performance from the head level with the handball.
- **Tools:** (5) handballs, tape measure, sticky tape, flat wall.
- **Description of the performance:** The laboratory tests injury to the inner rectangular area by going from the level of the head. As seen in the figure above, the laboratory is holding the ball in both hands and is positioned behind a line nine metres away from a wall on which two overlapping rectangles with the measurements (160 cm x 180 cm) and (100 cm x 90 cm) are drawn. The performance needs to adhere to the following specifications:
 1. Give the tester only five attempts.

2. Passing performance from behind the throwing line.
3. The attempt in which the tester crosses the throwing line is cancelled.
4. The test is performed with the preferred hand.
5. The ball must travel to the flat wall on which the two rectangles are drawn before touching the ground after leaving the tester's hands.

Registration

- If the ball hits the entire circumference of the inner rectangle area, the laboratory will calculate two degrees.
- One degree is counted for the laboratory if the ball strikes the complete perimeter of the outer rectangle (within the rectangle or on the lines designated for the inner rectangle).
- The lab will determine a score (zero) if the ball leaves the two rectangles or touches the ground.

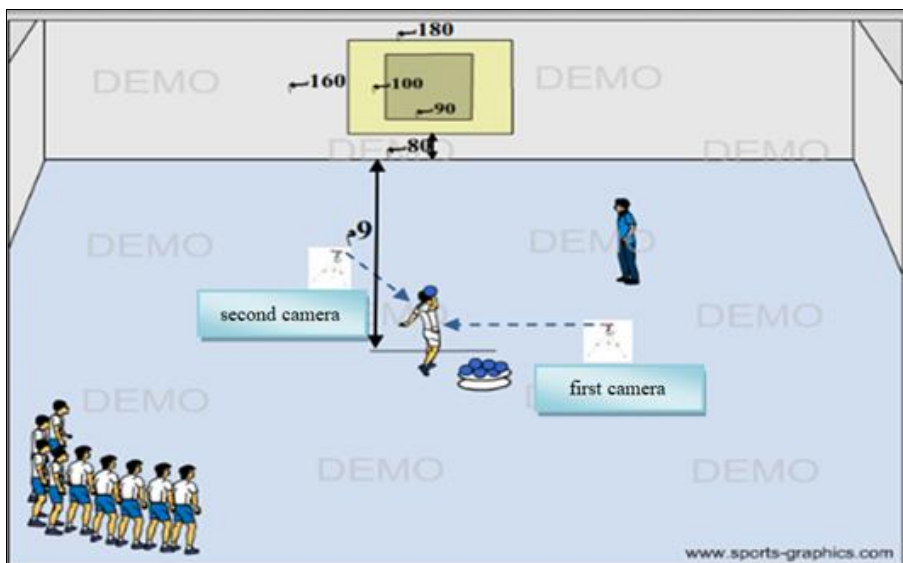


Fig 4: The performance test demonstrates the skill of passing from the level of the head to the overlapping rectangles with handball

2.5 Exploratory Experience

The researcher conducted the exploratory experiment on (9/8/2022) on (4) players from the research community, and the purpose of the exploratory experiment was:

1. Ensure that the test instructions are clear to the sample members.
2. Knowing the time required to conduct research tests.
3. Ensure the validity of the devices and tools used in the research.
4. Identifying the difficulties that may face the application process in order to avoid them when applying the tests in the main experiment.
5. Training the assisting work team to implement the tests and record their results.

2.6 Main Experimental Procedures

2.6.1 Pre-tests

Following a warm-up for the participants in the research sample, the researcher conducted the pre-tests on the experimental and control research samples on August 14, 2022, at 4:00 in the afternoon in the closed sports hall in the Al-Hajjaj neighbourhood. All temporal and spatial conditions were fixed with the intention of combining them with the post-tests.

2.6.2 Preparing harmonic exercises

The researcher applied the harmonic exercises on the research sample, as the duration of the exercises was (8) weeks, with three units per week, days (Sunday, Tuesday, Thursday) and a total of 24 training units. To clarify the vocabulary of harmonic exercises, the following must be clarified:

1. The exercises prepared within the curriculum included harmonic capabilities exercises, and all the variables shown by the exploratory experiment were taken into account and the intensity was extracted through time, while benefiting from the opinions of the specialists who

- were discussed, each according to his specialization.
2. Harmonious exercises were applied in the main section of the training unit, as the exercises were applied to the sample after conducting general and special warm-up exercises.
 3. The exercises were graduated in an ascending manner, moving from easy exercises to difficult exercises, and from simple to complex exercises.
 4. The researcher applied the principle of diversification in the exercises, that is, the continuous change in the exercises, as the harmonic exercises depend on the diversity in the motor duty and the few repetitions in order to avoid the occurrence of boredom and within the specified stresses.
 5. The number of training units that included harmonic exercises in the whole experiment (24) units.
 6. The time of performing harmonic exercises in one training session ranged between (25-40) minutes (main section).

2.6.3 Post-tests

The researcher conducted the post-tests on the research sample on October 16, 2022, at ten in the morning after completing the implementation of the main experiment. All temporal and spatial conditions were fixed with the intention of combining them with the pre-tests.

2.7 The statistical methods used in the research: The results were processed statistically by the spss.

3. Results presentation, analysis, and debate.

3.1 Results of the pre- and post-tests conducted on the experimental and control groups for the variables under consideration are presented and discussed:

3.1.1 Presenting the results of the pre and post tests for the control group of the researched variables.

Table 1: Shows the mean, standard deviations, degree of test significance, t-value computed for correlated samples, and significance of the difference between the pre- and post-tests f the control group for the variables under study.

Tests	Pre-test		Post-test		(T) value Calculated	Sig level	Sig type
	Mean	Std. Deviation	Mean	Std. Deviation			
Directional perception	23	2.88	10.33	1.21	15.77	0.000	Sig
Distance perception	13.65	1.87	8.38	1.17	5.29	0.003	Sig
Passing accuracy from higher of the head level	4.760	0.807	7.000	0.925	6.148	0.000	Sig
Passing accuracy from the head level	4.550	0.765	6.217	0.886	9.000	0.000	Sig

3.1.2 Presentation of the results of the pre and post-tests of the experimental group for the variables investigated

For the experimental group of the variables under consideration, Table 2 shows the mean, standard deviations,

value of (T) computed for correlated samples, level of test significance, and significance of the difference between the pre- and post-tests.

Table 2: Shows the mean, standard deviations, value of (T) computed for correlated samples, level of test significance, and significance of the difference between the pre- and post-tests.

Tests	Pre-test		Post-test		(T) value Calculated	Sig level	Sig type
	Mean	Std. Deviation	Mean	Std. Deviation			
Directional perception	21.83	3.79	16.83	2.31	3.09	0.027	Sig
Distance perception	13.07	1.25	10.91	1.34	4.38	0.007	Sig
Passing accuracy from higher of the head level	4.886	0.844	8.500	0.755	5.274	0.001	Sig
Passing accuracy from the head level	4.634	0.754	7.500	0.534	12.689	0.000	Sig

3.1.3 Presentation of the test findings (post-test) for the experimental and control groups for the variables under study.

Table 3: Shows the calculated (t) value for the independent samples, the level of test significance, and the significance of the variations in the (post-test findings are all displayed. For the experimental and control groups of the variables under study.

Tests	Experimental		Control		(T) value Calculated	Sig level	Sig type
	Mean	Std. Deviation	Mean	Std. Deviation			
Directional perception	16.83	2.31	8.38	1.17	5.036	0.001	Sig
Distance perception	10.91	1.34	7.000	0.925	6.358	0.000	Sig
Passing accuracy from higher of the head level	8.500	0.755	6.217	0.886	6.894	0.002	Sig
Passing accuracy from the head level	7.500	0.534	10.33	1.21	8.325	0.000	Sig

4. Discussing the results

As the results showed significant differences between the pre and post test and in favour of the post test in the sensory perception tests - kinesthetic and the accuracy of the forms of passing skill in handball - tables (1) and (2) were used to statistically present the results for the control and experimental groups. The exercises that the team coach used, the researcher attributes these differences in the control group to his use of several exercise strategies, including the use of general and particular physical activities at the beginning of the preparatory section. These exercises include jogging, speed movements, and jumping. As a result of their combined benefits for the development of various mental and motor skills, as well as their reflection on the skill side as shown by the accuracy of the handball passing skill forms.

According to the researcher, the reason for the significant differences between tables (1) and (2) for the participants in the experimental group can be attributed to the use of harmonic exercises that were developed by the researcher. The focus of these exercises was on the sample's participants executing intricate and varied motions intended to change their body positions, whether on the ground or in the air. The researcher additionally made use of auxiliary tools in the performance of activities the technical, tactical, physical, and cognitive capacities of the student be improved by integrating the educational and training unit and putting the designed curriculum into practise. Because arithmetic has beneficial impacts and contributes to learning and training processes with the least amount of time and effort, it is important to improve and expedite the learning process for students learning and training in math skills. (Al-Rubaie, Mahmoud Daoud, 2011, p. 343)^[3]

And the effectiveness of the harmonious exercises that the researcher applied in the training units aimed at improving and upgrading the level of sensory-kinesthetic perception as well as the skillful performance and self-realization of the learners and giving them satisfaction with their overall performance, and (Mohammed Al-Haila)^[4] confirms that "when implementing the exercises effectively, the general performance of the learners improves a lot Then they can gain the added benefit of developing new learning about how the skills are learned". (Al-Haila, Muhammad Mahmoud, 1999, p. 64)^[4]

And (Wajih Mahjoub) states, "Exercises are of great importance in general and specific physical preparation and skill preparation if they are for beginners or higher levels". (Mahjoub, Wajih, 2001, p. 167)^[5]

Essam Abdel-Khaleq stated that "The motor performance of the skill depends on the physical and motor capabilities private" and that this is why the researcher used a combination of physical, motor, and skill exercises. These exercises played a significant role in generating additional strength for the working muscles and accelerating the movement of body parts. (Abdel-Khaleq, Essam, 1999, p. 184)^[6]

According to the researcher, the degree of strength or

difficulty that a learner can exert towards a specific stimulus or stimuli is represented by the relationship between these capabilities and the technical performance of the skill in handball. Consequently, the greater the relationship between these capabilities and the technical performance of the skill, the more serious educational attitudes are needed because the learner needs to exert more mental and physical effort.

The researcher believes that the development of mental abilities represented by sensory-kinesthetic perception of the learner increases the behaviour of the performance and vice versa during the implementation of the skill with a link to the accuracy that It is important. Additionally, the performance of movements similar to the type of specialised activity (handball) contributed to the development of sensory-kinesthetic perception that is involved in the performance.

According to what is shown in Table 3, there are substantial differences between the two groups (the control and the experimental) in the post-tests for the variables under study, favouring the experimental group. And this thing confirms that the harmonic exercises prepared by the researcher and used as required by the motor and skill performance of the specialized school players, especially the passing skill, this skill has a specificity when implemented, as it differs from the rest of the other skills, because it requires a group of mental, physical and motor abilities, as well as its decisive role in the outcome of the matches, as well as the excitement and suspense when performing it successfully. Therefore, the researcher focused on developing and improving the sensory-kinesthetic perception of the players when preparing the harmonic exercises these exercises included a group of complex movements that contribute to the development of motor and physical abilities and their reflection on skillful performance. In addition to the use of exercises that include speed movements, jumping, and changing body positions, as these exercises together contribute to the development of sensory-kinesthetic perception, and the researchers also used some auxiliary tools in performing these positions. (Mohamed, J. J., Hrebid, N. K., & Hussein, A. R. A. (2022)^[8]

The researcher is of the opinion that a handball player must possess a wide range of mental and motor skills, and that the development of these abilities aids in the quick and accurate development of skillful performance. The researcher also believes that the size, quality, and effectiveness of skill positions, as well as the harmonic exercises that were accompanied by the educational means and tools that were prepared by the researcher, have all contributed to the development of the players' abilities. According to Scrmid, "the quality of the exercise during the specified period is also a significant influencer in the development of learning, as we find that learners occasionally exert a great deal of effort and spend a significant amount of time in ineffective exercises, which leads to failure and frustration." For this, the instructor or trainer must keep in mind that he should be detailed, persistent, and organised to construct the exercise's framework in an efficient way. (Scrmid A. Richard & eraig A. wrisberge, 2000, p.81)^[7]

5. Conclusions and recommendations

5.1 Conclusions

- The researcher's harmonic workouts helped the handball players at the Specialised School strengthen their sensory-kinesthetic awareness.
- Harmonious exercises helped the players of the Specialised School of Handball improve the precision of various sorts of passing talent.
- The development of kinesthetic perception reflected positively on the development of the accuracy of some forms of passing skill for the players of the Specialized School of Handball.

5.2 Recommendations

- Harmonious workouts are preferred when instructing young athletes and students in specialised schools since they help students strengthen their fundamental handball skills as well as their mental, physical, and motor capabilities.
- Conducting comparable research on various activities and age groups.

6. References

1. Karim Zahed Mohsen. An educational field for the development of sensory-kinesthetic perception and compatibility according to the percentage of contribution and its impact on the performance of shooting in handball for young people, unpublished master's thesis, University of Babylon; c2016.
2. Al-Badr, Naji Mutashar Izzat. The Impact of an Educational Curriculum According to Sensory Preferences for passing and shooting Skills, and Transferring the Effect of Her Vertical and Vertical Teaching in Handball to Students, Unpublished PhD Thesis, University of Babylon; c2014.
3. Al-Rubaie Mahmoud Daoud. Learning and Teaching in Physical Education and Sports, Najaf, Dar Al-Diyaa for Printing and Publishing; c2011.
4. Al-Haila Muhammad Mahmoud. Instructional Design, Theory and Practice, 1st Edition, Amman, Dar Al-Maysara for Publishing, Distribution and Printing; c1999.
5. Mahjoub Wajih. Encyclopedia of Kinesiology, Learning and Scheduling Sports Training, Amman, Dar Wael for Publishing; c2001.
6. Abdel-Khaleq Essam. Sports training, theories - applications, 9th edition, Alexandria, Dar Al-Fikr Al-Arabi; c1999.
7. Scrmid A Richard, Eraig A wrisberge. motor learning and performance 12: and Human Kinetics; c2000.
8. Mohamed JJ, Hrebid NK, Hussein ARA. Effect the Sequential and Random Methods to Developing the Performance of Some Defensive Skills for Handball Players of Babylon Governorate Clubs. PPSDP International Journal of Education. 2022;1(2):250-261. Retrieved from <https://ejournal.ppsdp.org/index.php/pijed/article/view/22>