

The Impact of Over-Learning Exercises in Developing Some of the Optical Vision Capabilities and Shooting Skill from Jumping in Handball Game for Young Players

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Abstract

Through the following-up and noting by researchers of most of the educational units in the handball game, they noticed that most of the educational units are almost walking at the same pace or following familiar methods when learning to shoot, as this is clearly reflected by the fluctuating the performance of the players during the match, so cases of unsuccessful shooting are sometimes seen, which is a major waste in the team's effort, that the aim of this study is to identify the effect of the exercises over-learning in developing some capabilities of optical vision and shooting skill from handball jumping for young players. The researchers have used the experimental approach with two equivalents (control and experimental groups) to suit the nature of the research problem. Determining the research community which represented by the handball center players in Dhi Qar, the youth category (15-17 years), whose number is (32) players, as the researchers excluded (8) players for the following reasons: (6) players representing the sample of the exploratory experience, and (2) Goalkeepers, for being this number of the individuals in the sample (24) players who constitute (75%) which were divided randomly and by lottery method into two groups by (12) players for each group, an experimental group that uses exercises over-learning and a control group depends on the style of the coach. The researchers concluded the following: The experimental group showed a clear and noticeable superiority to the control group in the optical vision capabilities and the shooting skill from jumping in handball game.

Keywords: *over-learning exercises, optical vision capabilities, handball shooting*

Introduction

In this century, the world has taken great strides in the field of science and development and harnessed all possibilities to serve humankind¹. This development has covered various fields and areas, as the sports field is one of these areas where development has led to prestigious places and this is clearly reflected in the overall sporting games through achieving high achievements and achieving record numbers², as this was not by chance but rather by applying concepts and modern science, as the kinetic learning is one of the important sciences in the sports field because of its importance in teaching and acquiring the individual kinetic skills with minimal effort and mastery and fixation of sports skills, since the basis on which sporting events³ are based is learning

the basic skills for each activity and trying to reach the best achievement through improving and developing the performance, consequently, the development of the performance is the goal that the workers in the sports field seek, which calls them seriously to think about finding new ways and methods that serve the development of the kinetic duty in all sporting activities in a manner which commensurate with the age group⁴, whether these activities are individual or group, since the performance of the basic skills involves a group of functional systems of the body, which requires work in them to harmonize with these systems, while some of the performance comes out integrated in all aspects, especially harmony and compatibility between the work of the nervous and muscular system, so that the end result is a high-level

skill performance, the handball is one of the important grouping games that reflects high requirements in performance, therefore, it requires from the player to have visual and physical abilities at a level that qualifies him to perform most of his skills, especially the shooting skill, so it has become necessary to pay attention to optical vision capabilities, especially (surrounding vision, optical vision, distinguishing accuracy), which is a prerequisite in achieving this compatibility to reflect the high effectiveness in performing the shooting skill, also, the learner’s enjoyment of a sound and high optical vision leads to achieve a distinct performance, thus reaching to the desired goals that both the coach and the player aspire to, as the importance of the research lies in preparing a set of post-acquired learning exercises in which the abilities of the players ⁵ are consistent to reflect high effectiveness in the level of shooting skill performance through the integration of all its parts, mental, visual, physical and movement components also to be accessible to all of the coaches, players and those interested in the handball game to be used and applied whenever it calls the need.

with two equivalents (control and experimental) groups to suit the nature of the research problem.

The Research community and its sample:

The research community that is represented by the players of the Handball Center in Dhi Qar, the youth players category (15-17 years) for the season (2020/2019), whose number is (32) players, has been identified, as the researchers have been excluded (8) players for the following reasons: (6) players are representing the sample of exploratory experience, and (2) goalkeepers, then the number of the individuals in the sample (24) players who constitute (75%) which were divided randomly and by lottery method into two groups by (12) players for each group, an experimental group that uses exercises over-learning and a control group which depends on the style of the coach.

Homogeneity of the sample:

The researchers have used the coefficient of difference to find homogeneity in the research variables as shown in Table (1).

Methodology

The researchers have used the experimental approach

Table (1) shows the homogeneity of the sample members in the search variables

No.	Statistical treatments variables	measuring unit	Arithmetic mean	standard deviation	Coefficient of variation	Sample Nu.
1	Chronological age	Year	15,75	0,675	0,457	24
2	Training age	Month	33,416	2,104	4,428	
3	Length	C.M	175,25	5,135	26,37	
4	Weight	Kg	56,958	4,956	25,563	

* All values of difference coefficient is lesser than (30), which indicates the homogeneity of the sample members.

The Equivalence of the two research groups: The researchers performed the equivalence by using the (t) law for independent samples and Table No. 2 shows that.

Table (2) shows the equivalence of the two research groups in the study variables

No.	Statistical Treatments Variables	measruing unit	Experimental group		Control group		(t) Value	sig	significance
			S	P	S	P			
1	Peripheral vision	Degree	3,533	1,125	3,266	1,162	0,638	0,529	Not significant
2	Moving optical resolution	Degree	1,133	0,915	1,4	0,985	0,768	0,449	Not significant
3	Visual perception	Degree	4,333	1,234	4,133	1,187	0,452	0,655	Not significant
4	Aiming to jump	Degree	7,416	1,831	7,5	1,167	1,33	0,895	Not significant

The Method of performance: The trainer gives the player a wooden stick with two colored balls at the two ends to hold it from behind the back without looking at it. The player spins the stick from behind with the fixing of the head.

The player spreads the hand which is holding the stick aside and the player must determine the color of the ball on the top or bottom.

Test conditions: The test is performed once with the right hand and once with the left hand.

Calculating scores:

-Each recipient is given five right and five left attempts.

- One score is calculated only if the correct selection is made.

The Test of Moving Optical Resolution ³

The Test purpose: Measuring the moving optical resolution.

The Test tools: A plastic collar with three colored balls which placed on the collar in equal distances.

The Performance method: the player picks up the colored ball, which is determined by the coach.

The Test conditions: The test is performed once with the right hand and once with the left hand.

Calculation of the scores: - Each recipient is given three right and three left attempts.

- One score is calculated if the correct ball is taken.

Test of scoring from jumping

The Test name: Accuracy test for the shooting skill by high jumping with a hand ball from a distance of 12 m. (1: 468)

The Tools of the test:

1- (6)Legal Hand Balls.

2-The height bar (2 m) and the width (3 m) are set between the player’s height zone for shooting and the target is the barrier (7 m) from the goal.

3- A legal handball goal.

4- Two iron boxes (2) designed for the purpose of testing the accuracy of shooting by high jumping with the hand ball, which is fixed in the upper corners of the goal, its dimensions (50 x 50 cm).

The Method of performance: The recipient stands holding the ball at a distance of (4-5 m) from the shooting circle with a diameter of (75 cm) and its center is a point on the free throw line opposite the middle of the goal, (Trying again if the handling is not correct), taking steps and then rise up high from the center of the shooting circle on the free throw line to shoot over the barrier on the square he chooses.

The Test rules: - Not to take more than three steps after receiving the ball.

- The player is given (6) attempts by three attempts in each box that records the test results.

- (Three points) are calculated upon entering the square ball for direct shot.

- Two points are calculated when the ball enters the allocated square after hitting the edge of the square.

- One point is counted to the ball which outside the square in the handball goal.

- A zero score is calculated for the ball outside the legal goal of handball.

The Exploratory experience:

The researchers conducted their exploratory experiment on a sample of (6 players) from the research community and without the main sample for the two days on (Monday and Tuesday) corresponding to (23-24 / 12/2019), as on the first day, the optical vision abilities tests were conducted, on the second day, the shooting skill from jumping was tested, so the goal of the following exploratory experience was:

1- Identifying the obstacles and difficulties that researchers may face during the main experiment.

2- Ensuring that the sample members are understanding the test item.

3- Knowing the time which allotted for the tests.

The Procedures for the main experiment:

Measuring the amount of learning:

1- Initial Examination Test: The researchers conducted a preliminary examination of the amount of learning in some of the optical vision capabilities and the shooting skill of jumping for the control and experimental groups in the two days (Monday and Tuesday) which corresponding in 30-31 / 12/2019 to know the amount of learning for the two groups before starting the educational curriculum, after that, the researchers, in cooperation with the instructor of the Specialty Center handball, gave the same educational curriculum which prepared by the trainer for the shooting skill for the two groups for a period of (4) weeks at the rate of three educational units per week, where the number of the educational units reached to (12) units, for a period from 1/5 / 2020 to 30/1/2020.

2- The second examination test: After completing the four weeks in the educational curriculum of the two groups, the researchers conducted a second examination of the amount of learning to know the level of learning that reached the learners in the control and experimental groups. As it was found that the amount of learning for the two groups is approximately equal.

The Pre-tests:

After completing all of the requirements of the main experiment and after the sample applied the educational units which set by the trainer to know the amount of learning which is about (12) educational units, as they reached a certain amount of learning, the researchers conducted the pre-test tests on the research sample in the hall of the Handball Center for two days (Monday and Tuesday) which corresponding in 3-4/2/2020. On the first day, the optical vision abilities tests were conducted, on the second day, the scoring skill by jumping test was conducted with the help of the assistant team.

The educational curriculum:

The educational curriculum was applied for the control and experimental groups by the trainer of the Handball Center in Dhi Qar, which is (4) weeks for the period from 9/2/2020 to 5/3/2020, by (3) educational units per week, as the number of the educational units is

(12) Unit, as the work of the two groups was as follows:

- **The control group:** The control group is applied the educational curriculum which followed by the trainer for teaching shooting skill from jumping, as the control group units were running in the days (Saturday, Monday, Wednesday).

- **The Experimental group:** The experimental group is applied for the educational curriculum by using exercises over-learning in the main section of the curriculum, as the researchers had prepared these exercises for teaching the shooting by jumping skill, that the educational units of the experimental group were taking place in the days (Sunday, Tuesday, Thursday). Then the educational unit was divided into three main sections which are (preparatory - main - final), as the time of the educational unit reached to (90) minutes, (20 minutes) for the preparatory section, (60 minutes) for the main section and (10 minutes) for the final section.

The Post-tests:

After completing the educational curriculum, the researchers conducted the two-post-tests on (Saturday and Sunday) which corresponding in (7-8 / 3/2020). On the first day, optical vision capabilities tests were conducted, on the second day, the shooting skill test was conducted with the same conditions with the pre-test, with the help of the assistant team.

The Statistical means: The researchers used the Statistical Package (SPSS).

1- The Percentage. 4- Coefficient of variation.

2- The Arithmetic mean. 5- (T) Law for the counterpart samples.

3- The Standard deviation. 6- (T) Law for independent samples

7- The amount of learning 1 =

3- Presenting, analyzing and discussing of the results.

Table (3) shows the arithmetic mean, standard deviations, (t) value and the level of significance in the pre and post tests for the research variables of the experimental group.

No.	Statistical variables Variables	measruing unit	Pre-test		Post-test		(T) Value	Sig	Significance
			S	P	S	P			
1	Peripheral vision	Degree	3,533	1,125	6,266	1,579	7,364	0,000	Significant
2	Moving optical resolution	Degree	1,133	0,915	3,866	0,639	17,833	0,000	Significant
3	Visual perception	Degree	4,333	1,234	7,866	1,505	7,411	0,000	Significant
4	Jumping to shoot	Degree	7.416	1.831	10.583	1.831	9.192	0,000	Significant

Table (4) shows the arithmetic mean, standard deviations, (t) value and the level of significance in the pre and post tests for the control group variables.

No.	Statistical variables Variables	measruing unit	Pre-test		Post-test		(T) Value	Sig	Significance
			S	P	S	P			
1	Peripheral vision	Degree	3,266	1,162	3,6	0,985	1,581	0,136	Not Significant
2	Moving optical resolution	Degree	1,4	0,985	2,333	0,816	5,137	0,000	Not Significant
3	Visual perception	Degree	4,133	1,187	4,533	1,06	1,871	0,082	Not Significant
4	Jumping to shoot	Degree	7.5	1.167	8	1.206	3.317	0.007	Not Significant

Through the results which are presented in tables (4,3) of the results of the pre and post-tests of the experimental and controlling groups in the optical vision capabilities and the skill of shooting by jumping in handball game, it was found that there are statistically significant variables between the pre and post-tests which are tending to the post tests according to the first hypothesis of the research, the researchers attribute this difference to the integrity of the educational curriculum for both groups (experimental and control). Specifically, the main section which contains scientifically selected exercises with correct, and consistent repetitions with the level and ability of the sample members, which based on the correct practicing, that training and practice on a specific skill within the kinetic duty leads to increase the experience and a development in the muscular and physical susceptibility, so practicing is the most important variable in the learning process for complex and even simple skills. (56: 6).

In addition to the above, the two approaches included selected exercises consistent with the age and

capabilities of the players as the experimental group applied the curriculum which is prepared by researchers according to exercises over-learning, while the control group applied the curriculum which is prepared by the trainer, that both groups have achieved a remarkable development in the capabilities of the optical vision, level of performance and skill, however, the control group has achieved an acceptable educational level with rates of development that are not at the level of the development of the experimental group, because learning skills was going on a single format and specific monotony, on the contrary of the experimental group, as the exercises that researchers set which is aiming after learning were so focused and accurate that they contributed directly for reducing time and effort, with the addition of a diversification in the required kinetic performance, as all available capabilities that can be used contribute greatly to the development of the kinetic skills performance, mastery and fixation it. (148: 5)

Table (5) shows the learning amount for the experimental and control groups for the pre- and post-tests of the shooting skill for both groups.

Groups	Tests	measuring unit	Pre-test		Post-test		The amount of learning
			S	P	S	P	
Experimental	Shooting by jumping	Degree	7.416	1.831	10.583	1.831	29.92
Control	Shooting by jumping	Degree	7.5	1.167	8	1.206	4.76

Through the table (5) it was found that the amount of learning among the members of the experimental group was greater than the amount of learning among members of the control group, that is, the meaning of learning preference was for members of the experimental group whose educational units were conducting according to exercises of over-learning, that the researchers attribute this superiority in the amount of learning to exercises of over-learning, their repetition and the positive response of players to them, which led for raising the capabilities of the players skillfully and improving the level of performance accuracy in a clear and concrete way, as the exercises of over-learning affected mostly in developing the shooting by jumping from a very large extent, this indicates the importance of these exercises and their effect on increasing the accuracy factor, which is the decisive factor for the shooting skill, as the higher the accuracy of shooting, the more it gives the team an opportunity to achieve a goal in the opposing team's goal, that the accuracy factor is based on the extent to which the shooting player has a high level of mental and kinetic abilities, as this is what was achieved, that the exercises which were prepared by the researchers that contributed effectively for improving the accuracy of the shooting skill by jumping, in addition to the above, the exercises over-learning have directly contributed to the development of optical vision capabilities.

Table (6) shows the values of the arithmetic mean, standard deviations, the (t) value and the significance level for the post-tests in the research variables between the control and experimental groups.

No.	Statistical variables Variables	measuring unit	Experimental group		Control group		Value (t)	Sig	Significance
			S	P	S	P			
1	Peripheral vision	Degree	6,266	1,579	3,6	0,985	5,547	0,000	Significant
2	Moving optical resolution	Degree	3,866	0,639	2,333	0,816	5,725	0,000	Significant
3	Visual perception	Degree	7,866	1,505	4,533	1,06	7,011	0,000	Significant
4	Jumping to shoot	Degree		1,831	8	1,206	4,08	0,000	Significant

Discussing the results of the post-test for the control and experimental groups of the research variables:

Through the results of Table (6) it was found that there is a clear superiority for the members of the experimental

group at the expense of the members of the control group in the research variables, as the researchers attribute this to the exercises that the researchers prepared which contributed directly to stimulate the players' senses and motivating them to respond to these stimuli as well as improving the positive relationship and the amount of neuromuscular compatibility, which is the main pillar upon which all the kinetic skills of the handball game are built, as the use of the exercises which are prepared by researchers has had a positive role in developing the capabilities of optical vision, as these exercises have the ability to distribute the visual effects that help to see visual development by improving the relationship between the eyes and the brain, as this increases the compatibility and flexibility of the eye muscles in the ability to control these muscles. ³ The educational method by using exercises over-learning aims to develop the skillful level through continuous (additional) repetitions with an expectation of the development which is resulting from the ability to correct response, which leads to the provision of multiple responses (ideal memory) in addition to skill stability, although the differences in quality are more than the quantity for this additional purpose of the extra exercise, much training on skill is necessary and essential thing to increase the suitability of the skill to many changes in the environment such as (competitor - hall - external atmosphere - devices) even the individual's physiological condition because it plays a role in many situations to generalize the skill and influence on the achievement results automatically despite the many factors which are surrounding it ⁷

Conclusions

The experimental group showed a clear and noticeable superiority over the control group in the optical vision and shooting by jumping skills of handball game. Organizing the work through the use of exercises over-learning developed by the researchers which contributed to the improvement of the amount of learning with the skill of shooting by jumping in the handball game for the members of the experimental group.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the College of Physical Education and Sports Science and all experiments were carried out in accordance with approved guidelines.

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