

THE EFFECT OF GROUP TRAINING IN DEVELOPING COMPATIBILITY & RESPONSE SPEED FOR HANDBALL PLAYERS (AGES 12 – 14 YEARS OLD)

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Abstract

Handball players need high motor attributes that are consistent with requirements of the game. Since handball is one of the team sports that depends on compatibilities and harmony in movements on time among players in close playing positions such as angles, assistants, middle and center players. This recalls for the concern of developing individual compatibility and of players through group training, so the researcher tried to apply these exercises on a group of players in the National Center for Sport Talent Care in Handball, Diala Center (20 players between 12 – 14 years old).

Keywords: Training, compatibility, speed, response, handball

1. INTRODUCTION:

The continuous development in handball in its physical, skilled and planning variables made trainers concerned with the start training young ages to build right bases for players and their motor abilities as they are important for the nature of their performance. It is necessary that the beginning of training handball players should concentrate on developing compatibility and quick response as they are necessary for other basic characteristics. Compatibility and quick response are important and necessary physical attributes in handball especially for young players or at the beginning of practicing the game (Kamal Darwish, 1998: 28). As for the significance of the study, it comes through group exercises which include movements of close positions in the game and the age nature (12 – 14 years old) as this is the beginning of practicing the game in Egypt through specialist centers of the game represented in “the Talented Player” project which is one of the most important projects by the Ministry of the Youth.

Problem of the Study:

Throughout the experience of the researcher in handball as she is a handball player and a trainer for long periods and various age stages including the current research category, she noticed weakness in compatibility abilities and quick motor response for players which resulted in weakness of their motor performance and not developing their levels in the reasonable limit. Therefore, the researcher found that through her study she will attempt to develop compatibility and quick response for handball players (12 – 14 years old).

Goals of the Study:

1. Preparing group exercises to develop compatibility and quick response for handball players (12 – 14 years old).
2. Determining the effect of group exercises on developing compatibility and quick response for handball players (12 – 14 years old).

Hypothesis of the Study:

- There are significant differences between pre and post tests in compatibility and quick response for the sake of the post-test.

2. METHODOLOGY & FIELD PROCEDURES OF THE STUDY:

The nature of the proposed problem determines the nature of the used methodology, so the researcher used the empirical method which is “a deliberate and accurate change in the conditions which determine a certain event and then observation of the changes resulting from it” (Amer Ibrahim, 2012: 48). This methodology corresponds with the nature of the study problem as practice is one of the most efficient means to get reliable knowledge. Since this method is described with accurate results compared with other results, the researcher applied the design of single group training with pre and post tests. This means measuring a single group before and after the trial. The difference between both results to measure the variable is considered an evidence of the influence if the empirical factor (Abo Taleb Mohamed, 19990: 21).

The Empirical Design:

Groups	Treatment		
	Pre-trial	Independent	Post-trial
Empirical Group	The studied tests	Group exercises	The studied tests

Population & Sample of the Study:

The way of choosing the population of the study is one of the requirements of scientific research as it is the part which represents the original or model population about which the researcher centers his work (Wgih Mahgoub, 2002: 164). The researcher set population of the study to be from handball players (12 – 14 years old) from the National Center for Sport Talent Care in Handball, Diala Center (20 players) for 2014. The choice of these players as a purposive sample was due to the following reasons:

- To ensure presence of the sample to perform the tests used in the study.
- To ensure application of items of the proposed training exercises by sample members.
- To ensure continuous supervision on implementing tests and trial.

Compatibility Test: (Ali Salloum, 2004: 58)

- Test name: tests of numbered circles.
- Test goal: measuring legs and eyes compatibility
- The used tools: (watch, drawing 8 circles on the ground with diameters of 60 cm for each circle and a whistle).

Performing the Test:

The tested player stands on circle (1) and then jumps to circle (2) with both feet at signal and then till the circle (8) with full speed.

Recording:

The tested player records the duration in movement through the eight circles.

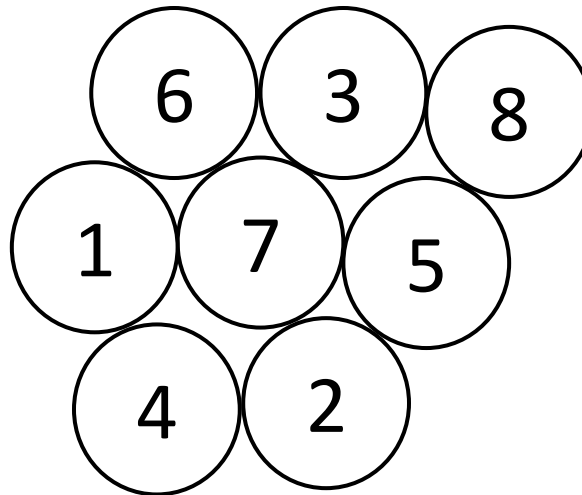


Table (1): Test of Numbered Circles

Nelson Test for Selective Motor Response: (Mohamed Hassan Allawi & Mohamed Nasreldin Radwan 1988: 254)

- Purpose of the test: measuring the ability to respond, move with speed and accuracy according to choosing stimulus.
- Tools: a flat area without barriers with a length of 20m and width of 2m, stop watch and a measuring band.
- Procedures: planning the testing area with three lines with a distance between each line and the other 6.40 m with a line length of 1 m.

3. PERFORMANCE:

- The tested player stands at the end of the middle line facing the referee who stands at the tip of the other end of the line (see figure 14).
- The tested player takes the readiness position to make the middle line between both feet and bending body forward.
- The referee holds the stop watch with one of his hands and raises it upwards and then immediately moves his arm whether to the right or the left with operating the watch at the same time.
- The tested player responds to the starting signal and tries to move with the most possible speed in the set direction to reach the sideline that is away from the middle line in 6.40 m.
- When the tested player takes the correct side, the referee stops the watch.
- If the tested player started to run in the wrong way, the referee should keep operating the watch till the tested player changes his direction and reach the correct sideline.
- The tested player makes ten consecutive attempts with 20 seconds between each stage (five attempts from each side).

- Choosing attempts in each side with a consecutive random way. To achieve this, the tested prepares ten pieces of paperboard with similar size and color, writes word (left) on five of them and the word (right) on the other five and then makes it upside down to be put inside a bag or a box and be pulled without looking at it.

Test Instructions:

- Each tested player takes a number of trials away from the measurement with the same terms with the purpose of identifying test procedures.
- The referee should train on the starting signal in order to give this signal with arms and operate the watch at the same time.
- Before testing the player, the referee pulls the previous ten cards randomly, records them according to their order in pulling in a special card and puts it in one of his hands to guide him to the sequence of signals' directions to record times. Recording times should be separated to prevent the tested player from expecting direction to the second attempt.
- The tested player should not know that he is asked to perform ten attempts distributed on both directions and their order is random. This is different from a tested player to another.
- The test should start by giving the following signal by the referee: "ready – go" and in all attempts this duration between "ready – go" should be in a range between 0.5 and 2 seconds.
- The tested player should perform some light exercises for warming-up. It is preferable to wear light shows and the test area free from any barriers.

Recording:

- The duration of each attempt is counted to the most approximate second.
- Average of the ten attempts is the degree of the tested player.

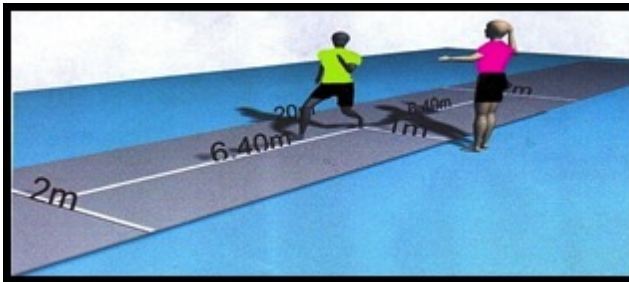


Figure (1)

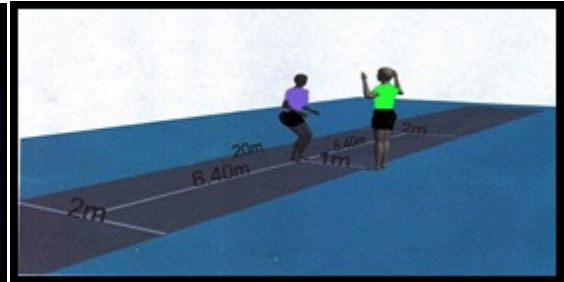


Figure (1 – 1)

Pre-Tests:

The pre-test was performed on Saturday 03/01/2015 after preparing performance equipments, presence of the assisting team, the formation of test recording forms with presentation of the needed performance method and counting marks in both tests.

Application of Compatibility Exercises:

The researcher prepared a set of group exercises in playing positions with and without tools within general preparation benefiting from the abilities in the specialist center, time, place and standard of the sample of the study chosen for this project according to the Ministry of Youth. For this purpose, the researcher took the following procedures:

Group exercises were applied in playing positions by trainers of the center and the researcher's supervision for 12 weeks during the stage of general preparation before special preparation by 3 units on (Sunday, Tuesday and Thursday) to make a total of 36 training units. Training units were divided according to three chapters (preparation, main and final parts). Exercises were applied in the main part of the training unit.

The duration of the single training unit is 90 minutes distributed on the preparation part and 70 minutes for the main part if the group training session's duration is 30 minutes with final part (5 minutes). Total time in minutes for group exercises in training units was 1080 minutes. The researcher depended on the interval training (with low and high intensity) by repetition training and then adopting gradation in training loads (1 : 2).

The researcher used the following points in applying the exercises:

- Gradation from the easy to the difficult and from the simple to the complex
- Using group training in playing position
- Training intensity and repetition for their effect on the nervous system

Post-Tests

The post-test was performed on Friday 27/01/2015 after preparing performance, presence of the assisting team, formation of test recording forms with the same conditions of the pre-test and then the researcher made data analysis using proper statistical rules.

4. DISCUSSING RESULTS:

Table (1) shows percentage of development in compatibility between pre and post tests. Table (2) shows significant differences between pre and post tests in compatibility as follows:

Table (1): Means and Standard deviations for pre and post tests, means difference and development percentage in compatibility test

Tests	Measuring unit	Pre-test		Post-test		Means difference	Development %
		Mean	S.D	Mean	S.D		
Compatibility	Second	12.23	6.1	11.15	7.3	1.08	8.83

Table (2): Means values of differences, total S.D differences' squares, the T counted and tabulated values and differences' significance between pre and post tests for compatibility

Test	Measuring unit	Mean	Total squares	T counted value	T tabulated value	Significance of differences
Compatibility	Second	0.4	2.5	5	2.09	Significant

The (T) tabulated value (2.09) at significance level (0.05) and freedom degree (19)

It was clear that the group exercises had an effect on developing compatibility through significant differences that appeared in post-tests. It is among the important motor attributes for handball players and all athletes. This was referred to by Kassem Hassan Hussein, 1990: 14 that “any sport activity related to functional systems especially muscular compatibility requires many adaptations including nervous muscular adaptation. This compatibility occurs by motivation, training and adaptation in each type of training as increasing body readiness or systems on training type, preparation and adaptation to increase compatibility likelihood for each move and skill”. The researcher found that group exercises contributed to increase the ability of players in the right motor performance as a result of developing motor compatibility which agrees with what was referred to by (Ali Salloum, 2004: 146) that “the most recurring mistake by beginners is the inability of compatibility when performing moves by involving unnecessary muscles in performance to make disturbance in movement”.

The importance of motor compatibility emerges when motor performance is related to the operation of muscular and nervous systems and their continuous interaction with a degree of agility, flexibility, balance, response speed, and high accuracy related to good motor potentials. Aboeela Ahmed, 1993, 313 found that “muscular and nervous compatibility is one of the important motor attributes necessary for mastering different motor skills. Compatibility forms out of multiple physiological and physical attributes such as balance, response speed, rhythm, motor feeling and the ability of body direction”.

Table (3): Mean, S.D, and development percentage for the pre and post tests in motor quick response

Serial	Statistical treatment	Measuring unit	Pre-test		Post-test		Development %
			Mean	S.D	Mean	S.D	
3	Motor response speed	Second	1.773	0.141	1.655	0.187	6.655%

Table (4): Means values of differences, S.D, standard errors of differences, T counted and tabulated values for the quick response test

Statistical treatment	Measuring unit	Mean	S.D	Standard error	T counted	T tabulated	Significance
Response speed	Second	0.188	0.166	0.047	2.954	2.57	Significant

The researcher attempted to develop motor response speed through training that develops simple and complex quick response as well as short distance speed exercises as shown by Adel Abdelbasir, 1999: 109. In addition, Amerallah Ahmed Al Bosaty, 1998: 30 found that: “using highly intense interval training has an effective influence in developing nervous system and adaptation to take decisions, enhancing nervous receptors, increasing nervous compatibility inside the muscle and increasing repetition of nerve impulses to stimulate muscles with high speed”.

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