Criteria representation which define development level of fundamental movement skil overarm throwing with synthhetic approuch

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The aim of this research is to determine the level of development of the fundamental motor skill overarm throwing using the synthetic approach which includes the best quality levels of manifestation.

A total of 460 boys were analysed. They were 3-10 years old from Skopje. For each group of boys was determined percentage of each criterion which defines development level of this fundamental motor skill. The results of our research show that there is a positive increasing trend of percentage in three out of four criteria. The lowest percentage criterion was the first which is the most difficult. It refers to swing arms which start with downward motion of the hand and is present with 19.86%. The highest percentage 78.19% was established in the second criterion which is the easiest and refers to hips and shoulders rotation until the moment when the non- throwing hand faces the wall.

Key words: fundamental movement skill, criteria, synthetic approach, percentage.

INTRODUCTION

Overarm ball throwing belongs to the fundamental motor skill group which is of manipulative type and it is a pattern of manifestation which has to be learned in order to have a basis for upgrading new and more complex movements of manipulative type that find their application in the process of physical education, sports and sport recreation. The evaluation of the development level of the fundamental motor skills i.e. the overarm ball throwing is one of the most important tasks that need to be taken into account in the process of establishing the physical education curriculums for children between the age of 3 and 10 in the period of which this motor skill should be learned and improved. [1,2,3,4,5]

This movement is divided into phases and it consists criteria of manifestation which can be evaluated in the easiest and in the fastest way through the synthetic approach¹. Having into account the percental representation of those criteria we can define which of them are the easiest and the most difficult for manifestation. [6,7,8]

EXPOSITION

Working Methods

In this research, 460 boys between the age of 3 and 10 have been analyzed. Each of them was given a task to throw a tennis ball as far as he can in 3 attempts. For more accurate analysis the movement was recorded with two-plane camera and, therefore, 1380 manifestations were analyzed. Then, using the software for biomechanical analysis of movement, Dartfish Connect 4.5, through slowing down the movement, zooming etc., each and every manifestation was analyzed separately and the results were put in one table where the manifestation criteria are also included² (table 1). The criteria percental representation was defined for each age group separately and through this the most difficult and the easiest criterion for manifestation were also defined. [9,10,11,12,13,14]

RESULTS AND DISCUSSION

Analyzing table 1, consisting the results of the percental representation of manifestation for children between the age of 3 and 10, we can state that the criterion with the lowest representation and in fact the most difficult manifestation is the first one with 19.86% and 274 repetitions. It refers to the arm swing that needs to start with moving the arm - hand downward. The criterion with the highest percental representation and in fact the easiest for manifestation is the second with 78.19% and 1079 repetitions and refers to the heaps and shoulders rotation till the moment when the non-throwing arm is positioned in straight line with the wall which is on the same side. The third criterion is present with

¹ The approach includes criteria that represent the best quality level of manifestation of the motor skill.

² The table is taken from the battery of tests for evaluation of the level of fundamental motor skill development from Dale Ulrich, Test of Gross Motor Development, 2000.

40.8% and with 563 repetitions and refers to the weight transfer through stepping forward with the leg opposite to the throwing arm. The forth criterion, which refers to the prolonged swing and to the slanting movement of the hand alongside the body after the ball has been thrown, is present with 982 repetitions i.e. 71.16%. These results, among other things, can be taken into account during the process of curriculums forming where learning and improvement of this motor skill is an objective.

Percental representation of curriculums with all groups of subjects				
Performance	Windup is	Rotates hip and	Weight is	Follow-through
Criteria	initiated with	shoulders to a	transferred by	beyond ball
	downward	point where the	stepping with	release
	movement of	non-throwing	the foot	diagonally
	hand/arm	side faces the	opposite the	across the body
		wall	throwing hand	toward the non-
				preferred side
	1	2	3	4
%	19.86	78.19	40.8	71.16
(repetition)	(274)	(1079)	(563)	(982)

Table 1

Through percental representation analysis for each age group separately (see chart 1) we can notice that the flat increasing trend is present with the second, third and forth criterion.



Chart 1. Criteria percental representation for each age group separately

Through evaluation of the development level of each fundamental motor skill we can register changes with children that occur during certain period of their life. The physical education teacher, among other things, needs to follow the development level of these skills, especially with younger children. It is necessary children to achieve development level as high as they can i.e. to achieve these skills. Those who do not achieve this are less capable and often are less prepared to keep up with achieving other more complex motor skills.

CONCLUSIONS

The results from this research show that with this group of subjects the most difficult criterion for manifestation is the first and it refers to the swing of the arm that needs to start the movement with the arm - hand downward. The easiest criterion is the second which refers to the heaps and shoulders rotation till the moment when the non-throwing arm is positioned in straight line with the wall that is on the same side.

The synthetic way of registering the development level of these fundamental motor skills is fast and relatively simple way of detecting the development level. It allows the teacher to follow their level of development so that he could plan and program the physical education teaching process where achievement of these motors skills is an objective.

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The report has been reviewed.