Ovidius University Annals, Series Physical Education and Sport / SCIENCE, MOVEMENT AND HEALTH., Issue 2 suppl. 2010
Our JOURNAL is nationally acknowledged by C.N.C.S.I.S., being included in the B+ category publications, 2008-2010.Indexed in: INDEX COPERNICUS JOURNAL MASTER LIST, DOAJ DIRECTORY OF OPEN ACCES JOURNALS, SOCOLAR

STUDY ON SENSORY-MOTOR CAPACITY ASSESSMENT IN JUNIOR TENNIS PLAYERS

COJANU FLORIN, CĂTĂNESCU ANDREEA
University of Pitesti,ROMAIA
coj_florin@yahoo.com

Abstract

We plan to conduct an assessment of sensory-motor ability to enhance technical performance parameters aimed at the game of tennis to beginners.

Purpose

We want to identify and evaluate the sensory-motor capacity to increase efficiency of learning elements and specific techniques to junior tennis game.

Methods Statistical-mathematical, Bonardell test.

Results

In terms of performance parameters for the test record for assessing sensory-motor coordination (test Bonardell complex reactions) may be made the following observations:

- increased the number of correct answers for both the experimental group significantly increased performance being delivered to the experimental group, in the context of an aging effect for the control group;
- decreased number of errors in the experimental group;
- decreased number of omissions of psychomotor tasks in the experimental group;
- increased rate of accuracy for both the experimental group significantly increased performance being delivered to the experimental group, in the context of an aging effect for the control group.

Conclusions

Upcoming programs for learning the game of tennis technique in early stage should be designed to cover operational structure models with content belonging to the level of development and education of sensory-motor ability at this level.

Key words: sensory-motor, tennis, beginner.

Introduction

In the training of tennis game, focuses on development not psihomotricității components and their implications for learning basic technique. Should be involved especially in this age to have good results in the juniors, seniors and youth. (Japanese Tennis Association, 1998)

In the selection tests in tennis game does not take into account the role of learning components psihomotric driving acts and actions and that their expression is subject to processes of maturation of the nervous system and the number of motor skills that the individual masters. (J Kemp,. & M.F., Vincent, 1968). Thus the degree of psihomotric training components being reduced to lower ages, baggage technical - tactical player of the future will be limited.

Purpose

We want to identify and evaluated the sensory-motor capacity to increase efficiency of learning elements and specific techniques to junior tennis game.

Research hypothesis

If we want to identify and develop components to increase efficiency psihomotric learning specific elements and techniques of tennis, then you need to do an analytical study of these processes and to identify which indicators psihomotricității (coordination, balance, ambidextrie, perceptions chinestezice, side, body scheme, reaction speed, etc.). psihomotricității components makes or facilitates the development and effective learning technique.

Procedures and Methods

Statistical-mathematical, Bonardell test.

Bonardell complex reaction test assesses sensory coordination - motor fair, accurate and timely. Sensory-motor coordination is the ability to combine individual motor movements depending on the links established between them and the components of an image after pre temporary relationships - the first in document imaging engine components and simultaneity between individual movements. Good coordination capacity is manifested by:

precision, accuracy, ease and fluency in psycho-motor synchronization operations. Coordination difficulties are apparent through time errors discrepancy between the information processing engine and instrument making, individual movements nesincronizare errors, errors of order (inversions or substitutions between movements) Commutativity errors (perseverații previous movements, interference between movements). (V.Horghidan, M.Epuran., M. Marolicaru, 1997)

Sample description. Proof is presented in readable form and apply individually. Subject is presented with response devices (desktop, pedals, levers) and shall notify the general purpose of short psychological test: "With this evidence I see how you can act quickly and correctly and how well you can coordinate your movements . Monitor screen is drawn on a gray background, four black squares. Two squares are arranged in the upper half (left - left hand, right - right hand) and the lower half of the screen (left-foot left, right - right foot). From time to time, the black surface of this square is changed into red, a phenomenon that the appearance of stimuli. Are presented in random order, hand-foot pair of stimuli, position the left-right, top-down (sample background includes 44 sequences). Response is required to issue type reaction task is to press the matter as soon as the button on the pedal lever and the corresponding pair of stimuli on the screen. (N Martin,., 2007).

The sample consists of three phases: - phase adaptation (presented in the training and practicing all modalities of response) - year (it runs a program with 30% of sample background items) - proof of fund - which consists of three identical programs which runs in succession default risk and under different conditions:

Speed 1: Slow scroll the background sample (duration of exposure to stimuli of 3 seconds and a random interval training in range 1 ... 4 seconds) is a weighted risk involved;

Speed 2: Speed increased by running the sample background (duration of exposure to stimuli of 2.5 seconds and a random interval training in range 1 ... 3 seconds) is a high risk involved;

Autotempo: test substance is administered to the rhythm of each subject (the following sequence occurring when the appropriate accessories to hold the current stimulus).

Notice the four black square positioned left / right, up and down, and two by two. At one point, given some color will change to red square. For each red square need to issue a response with levers or pedals as follows: the squares of the lever pull up left / right depending on their position and to pull the pedal down squares left / right all depending on their position. Remember how to pull for each square that are the basic movements to solve the task (to practice the movements). During pregnancy you combine these movements in terms of number and position of the squares appeared. For example: if a red square appears top left and bottom right a red square will have to pull the lever in the left hand button and simultaneously press the right pedal (is practicing some combination of movements). Red squares have a limited time. If you act properly and in time red is a break away immediately. Each wrong answer will be indicated by the word error. You can not correct the error. During the test do so to act timely and appropriately. (S Pyke,. C Elliott, , & , B.Pyke, 1974).

At the end of the sample are shown following parameters - number of responses correctly issued; total issued incorrect answers; total number of unprocessed items (omissions); accuracy rate, defined as the percentage ratio of (number of possible correct answers - the number of omissions), and (number of possible correct responses + number of errors); **Working Time sample - autotempou** average response time average latency time measured in hundredths of seconds); efficiency index (autotempou) sample), defined as the percentage ratio between the number of correct answers and working time. (S Pyke,. C,Elliott, & B., Pyke, 1974)

In addition to assessing psychomotor behavior and its evolution in terms of tempo slow, fast and autotempou, psychomotor test covers the organization and adaptability of the subject. Psychomotor organization is expressed in the ability to resist negative influences derived from:-restrictive conditions limiting the time required to achieve ongoing efficiency of operations, the inhibitory effect, frustrating and dysfunctional product error situation. Self is defined in this context that voluntary control ability and continuous monitoring of their responses as required by the situation. Self is manifested by difficulties in issuing responses perseverare precipitated / delayed / wrong. Such errors can be due to impaired psychomotor coordination (especially under time pressure), reduced alertness, weak self-control and / or difficulty adjusting their dynamics with dynamic load (side too alert / precipitates, slow reactions /

inert - reflected in the production of significant number of errors / omissions).

Results

Parameters on performance test record for fine manual dexterity assessment (Exhibit „Bonardell sinus) may be made the following observations: - increased speed of the task for both experimental groups, being significantly more pronounced increase in performance for the experimental group, in the context of an aging effect for the control group;

decreased the total number of errors and error correction for both groups, this trend being significantly more pronounced for the experimental group, remember, and in this case there is a maturing effect; decreased the average error correction, but no final differences noted between the two experimental groups; **- coefficient of error** - evenwithin individual performance in the experimental group increased between the two experimental times, comparing the two groups in final testing phase we could not get a big enough difference to be statistically significant.

Table no. 1- Test sinus Bonardell - fine manual dexterity

Parameter	Group	Test	Statistical indicator		Performance level	Difference Initial - Final	Difference ge-gc at final test (d.f. =22)
			Media	Ab.std			
Runtime: speed vs. working in the task. psychomotor slowness	GC	**initial**	144,92	30,010	medium	**GC: p =0,001**	**T.F. t = 2,142 p = 0,044 d = 0,89**
		final	124,75	36,412	medium		
	GE	**initial**	145,75	30,775	medium	**GE: p< 0,001**	
		final	95,42	30,411	medium to high		
No. sound vs. error. Poor workload completion	GC	**initial**	19,92	6,230	medium	**GC: p= 0,004**	**T.F. t = 3,623 p= 0,002 *d* = 1,50**
		final	17,50	4,622	medium		
	GE	**initial**	20,08	5,680	medium	**GE: p< 0,001**	
		final	10,92	4,274	medium to high		
The total time error: error correction vs. rapidly. persistence in error	GC	**initial**	9,87	2,325	medium	**GC: p= 0,014**	**T.F. t = 4,239 p< 0,001 *d* = 1,76**
		final	8,09	2,072	medium		
	GE	**initial**	9,92	2,321	medium	**GE: p< 0,001**	
		final	4,27	2,327	medium to high		
The mean error: vs. speed. slow error correction	GC	**initial**	0,52	0,140	medium	**GC: p=0,148**	**T.F. t = 1,579 p= 0,129 *d*= 0,66**
		final	0,48	0,146	medium		
	GE	**initial**	0,50	0,13	medium	**GE: p= 0,006**	
		final	0,37	0,18	medium to high		
The coefficient of error: accuracy vs.. uncertainty in the task	GC	**initial**	0,0729	0,028	medium	**GC: p= 0,830**	**T.F. t = 1,252 p = 0,224 d = 0,52**
		final	0,0717	0,034	medium		
	GE	**initial**	0,07	0,027	medium	**GE: p= 0,002**	
		final	0,05	0,039	medium to high		

Note that for both groups the average performance of sinus sample was significantly lower compared to initial testing of final testing, which equals the performance. This is due in part and bio-psychological development of children's natural, within two years of testing (aging effect).

To shade the interpretation of these results we used independent sample t test, which shows the average performance difference

between groups in final testing phase. The average performance for the experimental group was 95.42 seconds, well below the average performance for the control group (124.75 seconds). The difference between the two groups is statistically significant at a threshold of 0.05 (t = 2.142, df = 22, p = 0.044). Coefficient value of effect size (Cohen d = 0.89) indicates a large difference between the averages compared. Effect of training program implemented for the experimental group is an important one. Also, the null that the average population is outside the confidence limits (0.932, 57.735) again emphasizes the significance of the difference between media groups compared. We present below tables t test for difference analysis.

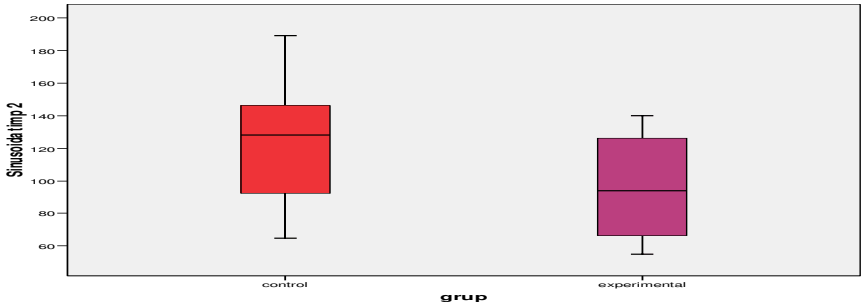
Table no. 2 Descriptive Statistics (final test). Sinus sample – runtime

GROUPS	N	Average	Standard deviation	Standard error of the mean
Martor	12	124,75	36,412	10,511
Experimental	12	95,42	30,411	8,779

Table no. 3 T-test for two independent samples. Sinus sample – runtime

Independent samples T test (variances equal)					
t	df	p	difference between average	confidence interval difference between the average	
				lower limit	upper limit
2,142	22	0,044	29,333	0,932	57,735

We present below the chart type Boxplot for difference analysis.



Test chart No.1 sinus - execution time - final test

BIBLIOGRAPHY

HORGHIDAN, V. 1997, *Psycho-diagnosis methods,* Edit. Didactic and Pedagogic, Bucharest, 21-30

JAPANESE TENNIS ASSOCIATION 1999, *On Court Assessment Test.* Unpublished paper, Johnson, N. (1973). SS system., 42-44

KEMP, J. & VINCENT, M.F., 1968, *Kemp-Vincent rally test of tennis skill. RQES,* Vol 39 (4). 38-41

MARTIN, N. 2007, *Psihodiagnoza skills and intelligence.* Ovidius University Press, Ovidius, Constanta, 2007 and test manual - RQ Plus battery Psiselteva (sample is part of the test system Psiselteva - Cluj), 51-62.

EPURAN, M., M. MAROLICARU, *Research methodology tangible activities* (support course). Babes - Bolyai University in Cluj-Napoca, Faculty of Physical Education and Sport, 24-30

PYKE, S. Elliott, C, & PYKE, B. 1974, *Performance testing of tennis and squash players.* British J. of Sports Med .. 8 (2), 80-86.