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EVALUATION OF THE PROCESSING WAYS INFORMATION IN A JUNIOR HANDBALL TEAM

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Abstract: *Knowing the predominant sensory perception of a handball player is important for the coach and the player equally. In this paper, we aim to identify the predominant sensory perception of a junior handball team. Subjects were 16 handball players born in 2005 or younger, at the category juniors III from Sporting Ghimbav Sports Club. The initial testing took place on 22nd December 2018 and 9th January 2019 and the final testing on 23rd November 2019. The method used is the application of psychological tests and interpretation of the results received. The conclusions of the study have highlighted useful information on how to improve the training of the junior players.*

Key words: *sensory perceptions, psychological test, handball, junior*

1. Introduction

Perceptual factors play an important role in the execution of motor acts. In the specialized literature, psychic processes are:

- Cognitive psychic processes;
- Volitional mental processes;
- Affective psychic processes.

Within the cognitive psychic processes are the following two:

- Psychic processes of sensory knowledge, of which they are part: sensations, perceptions and representations;
- Psychic processes of logical knowledge.

Performing a motor action must be the expected response or solution according to the requirements received. The answer given is the result received from received information. [3]

In adolescence, learning is increasingly based on the use of logical operations of thought. The adolescent develops his own style of learning and retaining information. He is able to retain more. It increases the ability to store abstract information, and increases the quality of mental operations. [1]

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In the instructive-educational process it is useful to know the ability of each player to receive information, by knowing the predominant sensory perception.

Sensory perceptions reproduce the set of things and phenomena carried out concretely, under the conditions of direct action of the stimuli on the sense organs. Perception is based on sensations. These are perceived as properties of certain things and phenomena in reality. [3]

Perceptions are classified as follows:
- Spatial perceptions;
- Temporal perceptions;
- Perception of movements (external objects and own movements).

Spatial perceptions refer to the fact that they provide the individual with information that helps them orient themselves in space. Also, in the game of handball the players can act according to teammates and opponents.

Temporal perceptions consist in the fact that the individual may be able to appreciate the running time and chronology of events.

The perception of movements consists in the analysis of the action related to space and time. [3]

The basic function of our brain and nervous system is to help the body adapt to the changes perceived inside or outside the body. The nervous system gathers information through the senses. [6]

Improving the evolution of the handball game worldwide, the speed with which the game phases follow one another has led to an increase in the dynamics of the game. [2]

Improving the ability to perceive information as quickly as possible is very important at all age levels. Specialists analyse all types of sensory perceptions, such as visual reaction time and reaction time variation. [5]

The dynamics of the handball game can be influenced by the ability to perceive information by the players. The basis of a decision is the player's perception. It is known that handball players, compared to subjects who do not play a performance sport, have significant differences regarding peripheral vision, respectively the distribution of the visual field and the ability to correctly recognize the stimuli. It has been found that handball players by practicing handball compared to those who do not play a performance sport have the ability to respond to the same stimuli in a shorter time. [7]

2. Premises and Purpose

In carrying out this study we started from the premise of the importance of knowing the sensory perception that the players who practice handball at the age of 12-15 years have. Knowing the sensory perception of the players provides us with useful information in conducting the training.

3. Material and Method

3.1. Participants

Subjects were 16 handball players born in 2005 or younger, at the category 3 juniors from “Sporting Ghimbav” Sports Club. They participate in the National Junior Championship, and the testing was carried out in the competition years 2018-2019 and 2019-2020.

3.2. Procedure

The present paper is based on the test method. With the help of testing, the type of sensory perception prevalent in the level of junior players was investigated.

The initial testing took place on 22nd December 2018 and 9th January 2019. The final testing took place on 23rd November 2019. All the requirements imposed by its author were respected in the application of the test.

In order to know the predominant sensory perception, the "Sensory perception test" was applied at the junior level. It contains a questionnaire with 15 questions, and each question has four answer variants. The subject must choose a single answer to each question. [4]

At the end of the test, the sum of the given answers is calculated, and the sum obtained for each category of response corresponds to a type of sensory perception. The largest number summarizes the predominant sensory perception of the player. According to the author of the applied questionnaire, there are some dominant sensory modalities, as follows:

- **Hearing:** The subject who prefers hearing is paying close attention to the words he uses and uses those that correspond to what he wants to convey. He is the person who likes to listen the music, has the ability to distinguish people by the sound of the voice, especially on the phone. The hearing aid has the ability to listen, it is advisable to be careful, because it's internal dialogue may take over and the subject may be away from the real world.
- **Visual:** the subject who prefers the visual mode has the ability to observe
- and orient himself. When learning, he must look to understand and to remember. The visual is a person with a lot of imagination and is creative.
- **Kinaesthetic:** the subject who prefers the kinaesthetic mode is a person sensitive to the environment, is a pleasant person and makes those with whom they surround themselves be at ease. He is a person who empathizes with others, and they find him very friendly. To be convinced of a thing he uses strong arguments and tangible evidence. When he feels negative impressions he locks easily. It is advisable to use visual and auditory perceptions in behaviour.
- **Inner Dialogue**: The subject who responds to the inner dialogue sensor, is the person who thinks a lot, and the reason goes before the passion. Most of the time, before acting, he puts his problem in mind and twists it until he finds a solution that suits him. This can be considered a disadvantage because it responds very hard at different times, which may not require much time to think. At certain times it is considered to live in slow motion. It is recommended to develop visual, auditory and kinaesthetic perception. [4].

4. Results

The answers received from the players provide us with information regarding the type of the preferred sensory modality (auditory, visual, and kinaesthetic) and can be found in the table below. (Table 1)

Table 1

Answers received following the Sensory Perception Test completed by Junior III, female, from Sporting Ghimbav Sports Club

No.	Initial of the name	Date of birth	The player's position in the match	**Hearing**		**Visual**		**Kinaesthetic**		**Inner Dialogue**	
				Test I	Test II	Test I	Test II	Test I	Test II	Test I	Test II
1	F.M.	2006	P	5	5	3	4	1	2	6	4
2	M.S.M.	2006	R.B.	5	1	7	7	1	4	2	3
3	S.A.	2007	L.B.	1	3	5	3	4	5	5	3
4	B.A.	2005	R.B.	5	4	5	6	3	3	2	2
5	D.A.	2006	C.B.	3	3	5	4	5	6	5	2
6	S.L.	2007	L.W.	1	5	5	2	4	3	5	4
7	D.T.	2007	G.	4	3	4	4	2	5	5	3
8	T.A.	2006	P	3	5	3	3	4	5	5	2
9	C.I.	2006	L.W.	3	3	6	5	3	4	3	3
10	D.M.	2005	L.W.	4	2	5	9	5	2	1	3
11	F.L.A.	2005	G.	6	4	4	5	2	4	2	2
12	P.A.	2005	R.W.	6	5	8	6	1	2	0	2
13	V.T.	2005	R.W.	4	3	7	4	1	5	2	3
14	P.L.	2005	P	3	3	3	3	4	5	5	4
15	M.A.	2007	C.B.	1	1	5	5	5	6	4	3
16	A.P.I.	2007	P.	3	2	1	2	8	8	3	3
	Arithmetic mean			**3.6**	**3.3**	**4.75**	**4.5**	**3.31**	**4.3**	**3.4**	**2.88**

Legend*: G – Goalkeeper; P – Pivot; L.W. Left Wing; R.W - Right Wing ; L.B. Left Backcourt; R.B. - Right Backcourt; C.B. - Centre Backcourt*

Analysing the obtained results, we can observe the following:

- the predominant sensory perception in both tests is the visual perception, in the second place the hearing perception, and in the second test is the kinaesthetic perception, in the third place, the internal dialogue, and in the second test, the kinaesthetic perception, in the place fourth place in testing one is the kinaesthetic perception, and in the final testing is the internal dialogue; (Tables 2 and 3, Figures 1, 2, 3, 4, 5)
  - there is no player to record answers for only one component;
  - there is a predominant component for each player.

Average the answers recorded in the test 1 Table 2

PLACE	PREDOMINANT SENSORY PERCEPTION	AVERAGE RECORDED IN TESTING I
1	Visual	4.75
2	Hearing	3.6
3	Inner Dialogue	3.4
4	Kinesthetic	3.31

Average the answers recorded in the test 2 Table 3

Place	PREDOMINANT SENSORY PERCEPTION	AVERAGE RECORDED IN TESTING II
1	Visual	4.5
2	Kinesthetic	4.3
3	Hearing	3.3
4	Inner Dialogue	2.88

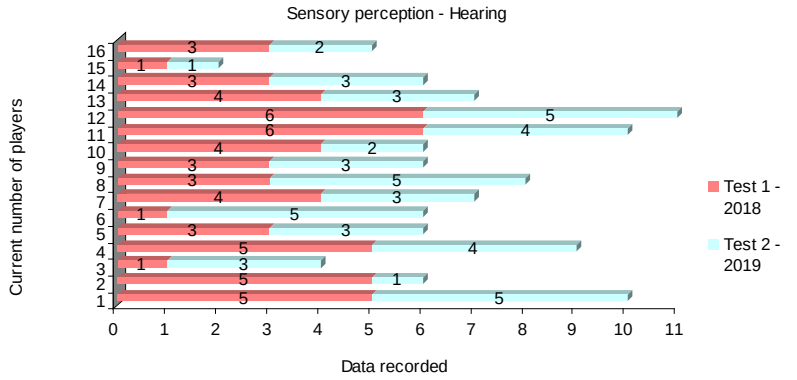

Fig. 1. *Graphical representation of the responses received to the Sensory Perception Test - Hearing, initial and final testing*

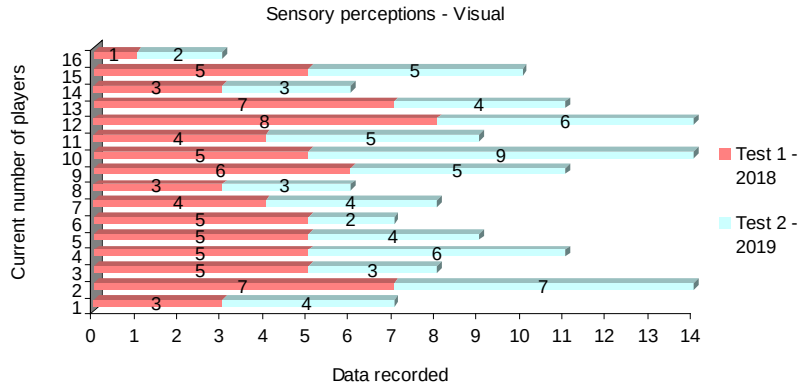

Fig. 2. *Graphical representation of the responses received to the Sensory Perception Test - Visual, initial and final testing*

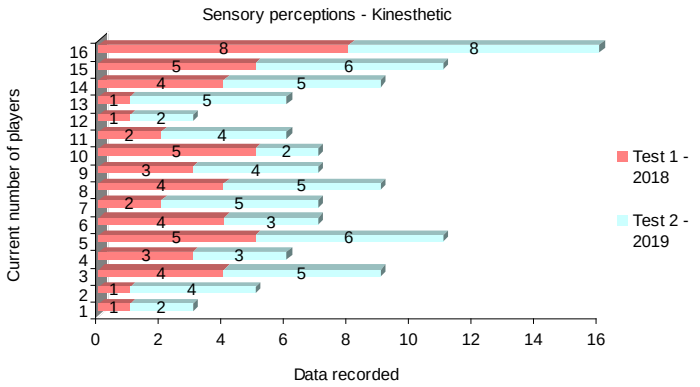

Fig. 3. *Graphical representation of the answers received in the Sensory Perception Test - Kinesthetic, initial and final*

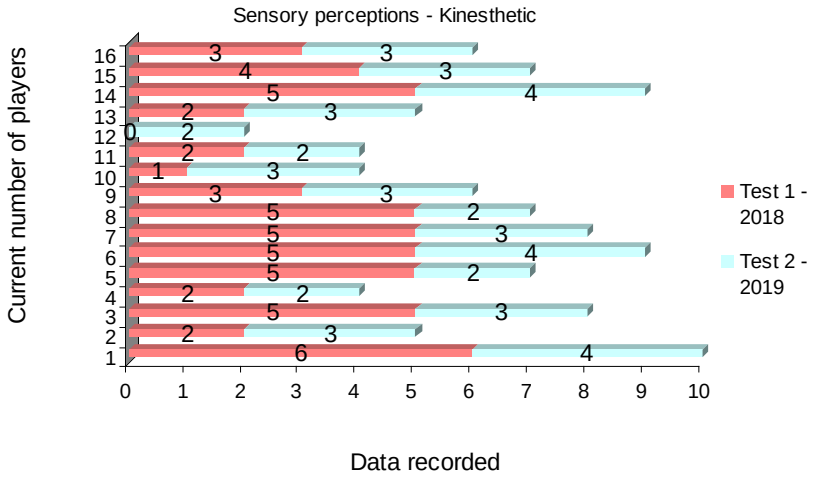

Fig. 4. *Graphical representation of the responses received to the Sensory Perception Test - Inner Dialogue, initial and final testing*

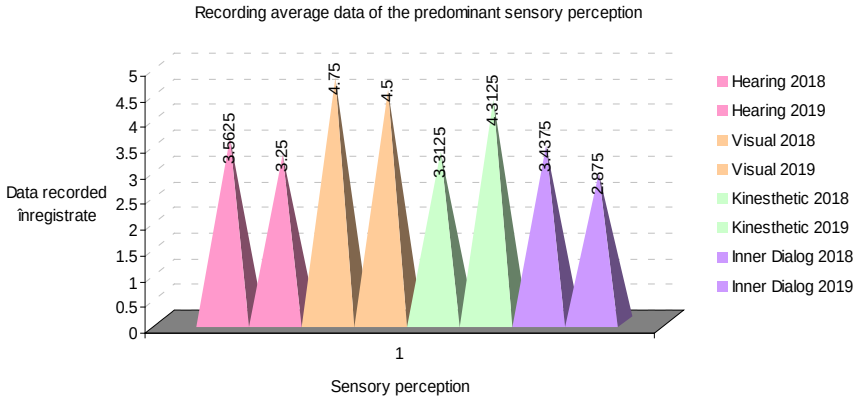

Fig. 5. *Graphical representation of the average of the answers received in the Sensory perception test, initial and final testing*

Changes in sensory perceptions have occurred in many players. After the two tests we can consider that each player has a predominant component, but the others also appear to a certain extent at one point. Each player reacts differently to the same stimulus. We can conclude that it is important to know the sensory mode that each player prefers at that moment. Knowing it will help us to choose the means of preparation and the way in which they are applied, so that the training objectives are achieved as efficiently as possible. The tests indicate that players are in full development, and their ability to perceive information can change over time.

Therefore, the particularities and characteristics of each player in the learning process are very important. Sensory perception can also help us in knowing and performing the tasks of the game in the attack and defence phase.

For example, the D.A. player perceives predominantly kinesthetic information; this being a game coordinator will have to perform the exercises in such a way as to perform the respective movement or action, and then to coordinate the others.

The left wing player D.M. has predominantly visual sensory perception; she must visualize to show her what to do and then to execute.

Comparing the results received at the two tests depending on the game position that the players have, we can observe the following:

At the first test, the players responded as follows:

- The players in the pivot position have as their predominant perception one player hearing perception, and two players kinesthetic perception;
- The left and right wings players have a predominant visual perception;
- The left and right backcourt players the predominant perception is visual;
- The centre backcourt players the visual perception;
- The goalkeeper have the predominant hearing perception or the internal dialogue.

At the second test were recorded the following results:

- The pivots have the same results as at the first test, except for one player in which the hearing has become predominant and in two other players, the kinesthetic;
- The left and right wings players have as their predominance one player hearing perception, two players the visual; two players kinesthetic; for three players, the initial perception was changed;
- The left and right backcourt players have now the predominant perception for two players the visual; one kinesthetic, for a player has changed the prevailing perception;
- The centre backcourt players the perception has changed from visual to kinesthetic;
- The goalkeeper has a predominant kinesthetic and visual perception, compared to the first test, in which the hearing and the internal dialogue were predominant.
- As we have observed for many of the players, the predominant sensory perception has changed.

5. Conclusions

The knowledge of the psychological abilities that players of a handball team have is necessary to realize the characterization of the player. Knowing the perception of the player's predominant sensors can help us in the training process.

Following the registrations made, the following can be concluded:

- all components of sensory perception manifest themselves in certain proportions, for each individual, but one is predominant.
- all individuals are different and react differently. Predominant sensory perceptions can change over time, as demonstrated by the results;
- it is noted that no player answered identical to the final test, compared to the initial test;

- the knowledge of the players is important in order to choose the optimal means preparation.

It is important for a coach and a player to know their predominant sensory perception, because the learning process can be accomplished faster. Knowing the sensory perception and comparing it with the play tasks that the players have is an important detail that must be taken into consideration.

If we follow the results obtained in tests according to the position of the players in the field, the sensory perception prevalent in some of them is unexpected. At the first test on the results recorded by the players of the goalkeeper position are different from those we expected. The expected response was for sensory perception to be visual or kinesthetic, but their predominance was auditory or inner dialogue. But at the second test, they changed visually and kinesthetically. For the players centre backcourt at the initial testing, is the visual perception that we expected, because they must have a clear vision of the game.

We consider that we need to know these details related to the characteristics of each player, because the coach can work effectively with the athletes. The data obtained provide useful information to a coach in the preparation process. Through their knowledge, the trainer can use the optimal means and methods of learning. He can also work individually with each player, he will know how to talk to the athletes, how to explain or demonstrate them. In the case of the player, the knowledge of the predominant sensory perception will help him in the learning process. He will know the incentives that can help him to retrain information faster and easier.

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