THE BODY INTELLIGENCE - DESCRIPTION AND MEASUREMENT

Florin VANCEA
University Lecturer PhD, Spiru Haret University, Brasov, Romania
(florin.filia@yahoo.ro)

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Abstract: *This paper aims to present the first part of a study on body intelligence, a relatively new concept that comes together with the most consecrated terms in the field such as cognitive intelligence, emotional intelligence, or spiritual intelligence. The theoretical framework of the paper is based on well known approaches such as Gardner's multiple intelligence theory, but also on more recent neurological and psychological studies on the human body. This is a form of knowledge that, although it is the first one to emerge in human ontogenesis, has not been much studied and promoted and opposes rational or iconic knowledge.*

In the research part, there is presented a first version of a questionnaire that measures the level of body intelligence. This first variation of the questionnaire was based on the testing of a group of 52 adult subjects. The item analysis revealed a good internal consistency given by an alpha coefficient of 0.805.

The paper is a good starting point for continuing the study in order to establish the external consistency of the questionnaire and to develop possible new variants.

Keywords: *body intelligence, kinesthetic intelligence, questionnaire.*

1. INTRODUCTION

This paper aims to present the first part of a study on the concept of body intelligence. This is a relatively new term that starts to take an important place alongside more established terms such as cognitive intelligence, emotional intelligence, spiritual intelligence. In the research part, there is a first attempt to define a questionnaire measuring the level of bodily intelligence.

2. KINESTHETIC INTELLIGENCE AND WHOLE BODY INTELLIGENCE

The Theory of Multiple Intelligences, developed in 1983 by Harvard University professor PhD. Howard Gardner, presents eight different types of intelligence that cover a much wider aria of the human intellect. The eight fundamental dimensions of the concept of multiple intelligence, according to Gardner's theory, are: verbal / linguistic, logic-mathematical, spatial, kinesthetic, musical, intrapersonal, interpersonal and naturalistic. He then introduced the type of existential intelligence.

Kinesthetic intelligence takes into account the abilities of expression with the help of the body, the very good coordination between the parts of the body, and solving of the problems through physical activities. It is the intelligence specific to athletes, actors, dancers, ballet dancers, surgeons, those who have jobs where the fineness of movements is important. People with a developed kinesthetic intelligence have a very good eye-to-hand coordination, a great ability to express emotions with movement and are talented in sports.

Thus, kinesthetic intelligence presupposes expression with the help of the body, the ability to use the whole body or parts of the body to do different activities, to learn or solve problems in everyday life.

The term "body intelligence" (or somatic intelligence) is newer and requires something more than the kinesthetic intelligence it embodies. Body intelligence is based not only on the kinesthetic sense but also on the inner sense. The information we receive from the internal environment, even when the body is not moving, is a profound and complex source of knowledge based on which we can make better decisions in life.

3. THE CORPORAL INTELLIGENCE AND THE SENSORY SYSTEM

The receptive part of body intelligence is the interceptive sensory system.

The sensory system has two main components: the exteroceptive system and the interceptor system. The external system receives external information through sensory organs: visual, auditory, taste, olfactory and tactile. The interceptor system receives information coming from within the body, from the organs, muscles and connective tissues. The latter is composed of sensory nerves that react to stimuli coming from within the body and has two components: proprioception and vestibular sensation. Proprioception, in turn, is composed of kinesthetic sense and inner sense. The vestibular sensation helps the man maintain a balanced body posture and a comfortable relationship with gravity.

The kinesthetic sense helps the person to locate all parts of the body in space and thus to coordinate all movements. Information is taken from the muscle and from the connective system. This sense monitors how and where we move our hands, fingers, legs and trunk to perform different tasks such as writing, walking, dancing, skiing, etc. The inner sense gives us information about different body conditions such as heart rate, breathing, temperature, muscle tension, visceral sensations. It helps identify emotions.

4. THE BODY INTELLIGENCE

Body intelligence is a capacity that we have, which involves first and foremost focus on the body and on the signals from the interceptive sensory system, and use to know the environment and the relationship we have with it. Secondly, it involves a form of continuous dynamic processing of this information through the locomotor system for better adaptation. It is the oldest form of intelligence because somatic experience is the first language of the human being. Knowledge through the body called *embedded cognition* is opposite to mental knowledge and is the first form of cognition that the human being resorts to. Before speaking and before assimilating the ability to reason and analyze, attributes of mental knowledge, man relies on bodily sensations and adapts through movement.

The approaches to "embodied cognition" and "enaction" promote the theory that human behavior is born from the real-time interaction between the nervous system and the environment that offers opportunities and information. "Enactive" is the adjectival term introduced by Varela, Thompson and Rosch (1991) to name what they perceived as the third orientation in cognition (neither fundamental objectivist nor fundamental subjectivist). This term was introduced to emphasize the idea that cognition is not the representation of a world given by a given mind, but rather the reproduction of a world and a mind based on all the actions that a human being has done and does in the world.

The term "enaction" is used to describe a third way to organize knowledge and one of the forms of interaction with the world. The first definition of enaction was introduced by psychologist Jerome Bruner in connection with the structure of the other two ways of knowing: Iconic and Symbolic. Active knowledge is the knowledge that comes from action and which is built on motor skills, such as manipulating objects, cycling, or practicing a sport. It is more natural than symbolic or iconic knowledge (imaging) both in terms of learning process and how it is applied in the world. Such knowledge is inherently multimodal because it requires the coordination of the various senses. Symbolic knowledge uses mathematical words or symbols, and iconic knowledge uses images.

The approach to body intelligence, supported by studies and theories on "embodied cognition" and "enactive", demonstrates that the human organism is not only a passive receptor of the impulse of the environment but also an actor in this environment so that what he experiences is modeled by the way he acts. Body intelligence, as a scientific concept, is proposed by numerous studies and researches. We recall here studies conducted in 2009 by Alejando Lleras, Ph.D. in Psychology at the University of Illinois, and Laura Thomas, Ph.D. in Psychology at Vanderbilt University, on how to solve problems through body movements. The results showed that body movement influences deep thoughts and the ability to solve difficult problems. Lleras and Thomas have shown that "People are inclined to believe that their mind lives in the brain and that they deal with abstract aspects that have no connection with the body." and "This innovative study is fascinating because it demonstrates how the body is a part of our minds in an overwhelming way. The way we think is affected by our body and, in fact, we can use our body to help us think." (Sisgold, 2016, 68)

5. RESEARCH DESIGN AND METHOD

The purpose of this first research is to define a questionnaire that measures the level of body intelligence. The research is statistical, quantitative.

Objectives:

O.1. Identifying the dimensions to capture body intelligence.

O.2. Defining the questionnaire by selecting items and testing the subjects.

O.3. Checking the validity of the questionnaire by internal consistency of items.

General hypothesis

In defining the questionnaire, we started from the premise that body intelligence is a capacity for human adaptation.

The target

The research was initially done by applying the rough version of the items on a group of 30 adults who gave feedback on their understanding. The final testing, after correcting the items, was performed on 52 adult subjects aged between 18 and 58, belonging to different work areas. The gender distribution of the batch was: 50% male, 50% female.

Defining the questionnaire, setting dimensions and items

The operational definition is: Body Intelligence is the ability of the body to adapt to new challenges of the inner / outer environment by perceiving and becoming aware of body signals and by specific response modalities.

The three established dimensions were:

- The ability to sense and decode the inner signals in the case of the challenges coming from the internal environment (inner awareness).
- The ability to sense and decode the inner signals in the case of challenges coming from the external environment (external body-related awareness).
- The kinesthetic interaction capacity with the environment (body response).

For each of the three dimensions, 7 items were set, resulting in 21 items.

Research results on the internal validity of the questionnaire

The chart of the body intelligence frequencies are shown in fig. 1.

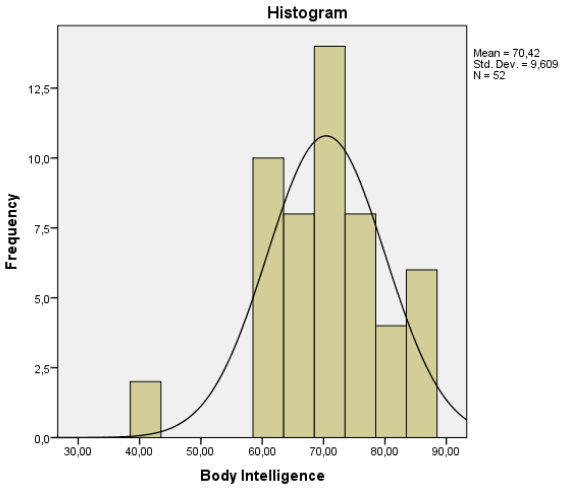

FIG. 1 The chart of the body intelligence frequencies

Internal validity analysis was performed by item analysis, as a result of which, as can be seen below (Table 1), it was obtained a good alpha coefficient of 0.805. Therefore, we can say that this first version of the questionnaire proves to be of good internal validity.

Table. 1 Internal validity analysis

Reliability Statistics

Cronbach's Alpha	N of Items
,805	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
inner awareness	47,5385	31,704	,718	,714
external body-related awareness	46,8077	46,747	,721	,674
body response	46,5000	56,647	,612	,794

6. CONCLUSIONS AND DISCUSSIONS

This paper is a good starting point for a broader study on the relatively new scientific concept of body intelligence.

This opens up a few perspectives to study, explore and deepen the human capacity that we use in life just before we turn to other forms of intelligence. The research part was completed with a first version of a questionnaire measuring the level of body intelligence, consisting of 21 items. Analysis of internal consistency by statistical method showed a good alpha coefficient of 0.805, which validates this questionnaire. A first future step concerning the questionnaire is to establish external validity.

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