



Intelligence and Creativity in Basketball

KEYWORDS

motor intelligence, creativity, basketball

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ABSTRACT *Intelligence is a mental process that develops from childhood in the process of training and education.*

Current efforts in intelligence research involve complex theories which explain the theories of multiple intelligence and resize the use of standardized tests in measuring the intelligence.

Psycho-motor, in the motor learning context, results from the integration of the interaction between the education and synergy maturation and the conjugation of motor and psychic functions, not only in relation to the observable movements and expressions and to efficiency, but also to what determines and accompanies them: creativity, intelligence, will, affectivity, needs and drives. Intelligent learning concerns knowledge forming and problem solving. The main skills in this type of learning are made up of algorithms that work automatically.

INTRODUCTION

In the instructive-educative process specific to sports field, a particular attention should be paid to the personality main factors: intelligence, special aptitudes and motivation. Specialists think that creativity is a condition for being considered an over-gifted person, fact that supposes the existence of a close relationship among creativity, higher mental aptitudes (intelligence), motor aptitudes and biomedical aptitudes. The connection between intelligence and creativity proves that in creation, from a certain level upward, even more important than intelligence are the motivational and personality factors (vivid curiosity, interests, development, perseverance), the environmental factors (family) and the social-educative conditions.

Creativity is a process that develops over time and is characterized by originality, originality, spirit and concern for achieving concrete adaptation is an "integrative method of human personality which expresses the qualities of the players leading to originality." Creativity is defined as the ability and the player's willingness to deal with new situations using the tactic known in the game. This ability uses experience and previously acquired knowledge. Creativity is gradually integrated in intelligence, as we develop psychophysically and somatic, it increases with cognitive development, the two dimensions of personality stimulating each other.

Building up mental skills is a complex process focused on the behavior structuring and stabilization, but also on the creation of a flexible thinking when applying the motor skills and abilities specific to the bilateral game concrete situations.

Motor intelligence and creativity in sports have got a major interest for many coaches, sports psychologists and not only.

The concept of intelligence has numerous definitions, without, however, existing one unanimous accepted. In understanding and define the concept of intelligence there were disputes between those who come to recognize mainly or exclusively the hereditary character of intelligence and

those who have seen the result of influences intelligence environment or education.

Intelligence, is in essence, an active operation. „It is a mental adjustment, an indispensable tool of trade between the subject and the universe, when their circuits beyond the immediate and momentary contacts to achieve comprehensive and stable relationships" (Gavriliu, L., 2001).

If the athlete engaged in the performance activity is considered as a bio-psycho-social entity, his preparation must be globally approached within the training process. In this sense, Dragnea and Mate-Teodorescu (2002) present a completed scheme of the training content (according to Epuran, M., 1982):

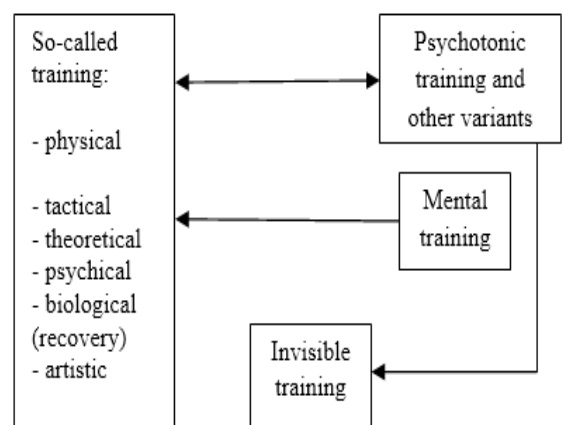


Figure 1: Sports training content (Dragnea, A. and Mate-Teodorescu, S., 2002)

Psychology enables the coach to know the athlete's personality traits differentially regarded in their evolution, which facilitates his intervention in the training process, in order to improve his athletes' psychical capacities, according to performance sports requirements.

Training refers to the sports performance preparation, instruction, education and condition.

Sports performance is multi-determined and it is very difficult to define which of the factors has the greatest weight when the individual's capacity reaches its highest limits.

Sports performance, as well as the performer, is the result of the reunion of three systemic components: the biological, psychological and social ones.

The biological component includes somatic, biochemical and physiological factors; the psychological component encompasses the athlete's whole personality, aspirations, ideals, will and creativity; the social component comprises the whole culture and civilization, science and technique, but particularly the human relationships (Epuran, M., Hold-evici, I. and Tonița, F., 2001).

The aptitudes for sports performance join together: genetic components - predispositions, features of the central nervous system, somatic features; psychic components - thinking, will, creativity, motivation for performance, emotional balance; social components - education, instruction, instructional technologies, organization of the selection for performance sports, management, all these in a large and various combination, which renders even more difficult the coach's activity directed to performance reaching.

In order to get better sports performances, we think, due to our experience in performance sports activity, that it is not enough for the athletes to be gifted only with special motor aptitudes, but also with general intellectual aptitudes: intelligence, attention, memory. Among the most frequently used tests in sports psycho-diagnosis, on the first place we find those investigating the mental capacity level, the intellectual efficiency, in order to establish the intelligence quotient. Because of the learning process complexity in sports field, we should pay a particular attention to creativity within the sports selection process, by identifying the main personality factors composing it - intelligence, special aptitudes and motivation, and subsequently within the instructive-educative process.

Creativity is more and more seen as a prerequisite for an over-gifted person, because the young people identified as being creative will have to "produce" something special in any domain (inclusively in that of sports), or this fact supposes the existence of a close relation between creativity and some higher mental aptitudes, such as intelligence (Jigău, M., 1990).

Creative basketball players should be able to easily learn the basketball game technique and adapt it to their personality, by building thus their own execution or technical style, provided that they prove efficiency while performing in an outstanding way.

Usually, an over-gifted person has the ability to simultaneously perform in many fields. In sports, we can find this ability in combination with others, for instance with the mathematical or technical ones and not only. From our point of view, the most important thing is to succeed in exploring sports ability concurrently with the others, without obstructing the children's perspective.

Some authors think that being over-gifted or highly gifted means to possess "a potential creativity, but which is not always rendered manifest" (Micle, M., 1991).

Creative performances in sports field correlate the respective activity with the talent and the phenomenon of being highly gifted.

Over-gifted persons are thought to have "a psychological and physical natural predisposition to learn and get higher performances during the years when they build up their personality, but also the possibility to reach a high achievement level during their adult period" (Feldhausen et al., quoted by Stănescu, I., 1993).

Gagea, A. (2007) considers that motor intelligence is the motor correspondent and component of mental intelligence. He states that motor intelligence can be recognized due to certain characteristics: motor memory, motor creativity, spatial-temporal sense. Sports performance depends on many factors, but motor intelligence is indispensable to the motor performance development.

Sport science literature frequently suggests that both game intelligence and tactical creativity are important for successful athletes in different kinds of sports. So, tactical creativity can be regarded as a variety of rare and flexible decisions used in different kinds of situations. (Memmert, D., 2011).

METHODOLOGY

Purpose. This study aims at finding out to what extent motor intelligence influences the basketball players' creativity in the relation game.

Methods and subjects. The Raven test of intuitive intelligence, the experiment, the statistical-mathematical method, the graphical method.

To achieve the purpose of our research, we applied a training program over one competition year, during which the tactical component weight was increased through technical-tactical relation actions that provided multiple finalization opportunities.

By using the relation game, subjects had the possibility to complete their actions and technical-tactical combinations relying on their own experience, tactical thinking and motor intelligence.

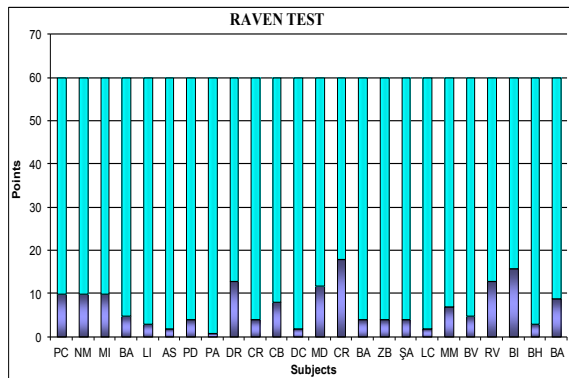
FINDINGS

The Raven test results are presented in the table below:

TABLE – 1
PERCENTAGE WEIGHT AND ARITHMETICAL MEAN OF THE RAVEN TEST RESULTS

Number of subjects	Grading	Percentage	\bar{X}
13	Very good	54.16%	52.95
6	Good	25%	
5	Medium	20.84%	

Among the 24 subjects included in our research, 13 players were scored Very good, which represents 54.16%. A number of 6 players were scored Good after the accumulation of points in the evaluation grid, which represents 25%. The 5 subjects with an average score represent 20.84% and the arithmetical mean (\bar{X}) of the results obtained by the 24 basketball players is 52.95%.



GRAPH 1- INDIVIDUAL RESULTS OF THE RAVEN TEST

CONCLUSIONS.

Morales's study results (2009) confirmed that the use of the situational-global method provided improvements in the tactical parameters on the learning of tactical ability in both intelligence and divergent creativity manifestations of thoughts in basketball players.

The training methodology optimization by promoting a program based on concrete operational objectives directed to the relation game creative solving determined the motor intelligence development. The training program content and the test results validate the hypothesis our research.

Basketball players must have the capacity for anticipation, a personality with innovative tendencies in abstract situations, due in large part to the types of tactical demands imposed or encountered in practice or in the competition.

Psotta & Martin's study (2011) also suggested that decision making skills and skill execution is the major components of game performance, that can be significantly developed using the mechanism of implicit learning.

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