MODERN APPROACHES TO INTELLIGENCE

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Abstract: *With the theory of multiple intelligences, Howard Gardner opposes intelligence uniqueness. Gardner posits that there are seven forms of intelligence: linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal, and natural.*

The theory has application in education, and professional guidance, but there are no predictive data, empirical, to support or to test the theory as a whole.

A second approach - triarchic theory of intelligence - proposed by Sternberg, professor of psychology at Yale, aims to specify the mental mechanisms behind intelligent behavior.

Conclusion: discrepancies between scientific findings - modern theories and their transfer in the fields of application.

Keywords: *multiple intelligences theory, intelligent behavior, educational intervention, triarchic theory of intelligence, mental mechanisms.*

1. Introduction

Modern approaches of intelligence call into question the following:

- Meta-issues - related to understanding a person's own thinking (Nelson, 1999);
- Aspects which take into consideration knowledge (Lemeni and Miclea, 1998);
- Specific behavior of oriented adaptation towards achieving goals (Sternberg, 2002);
- Multiple intelligences (Gardner, 1998, 2003).

They were bent on intelligent behavior rather than wishing to explain the contents of intelligence. Beginning with the theories of cognitive psychology, modern approach integrates the concept of intelligence in the context of information processing.

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The central idea of these theories is that intelligence reflects how individuals use their specific knowledge, strategies, and cognitive and metacognitive processes to be successful.

Recent theories that are most appreciated by the scientific community are those of Gardner and Sternberg, they have in common the following:

- Intelligent behavior, as any behavior can be significantly improved through education and training;
- The most important aspect is to understand fundamental processes that determine intelligent behavior;
- Standard tests are a relative measure of intelligence, still being used to make short and medium term predictions about the academic performance of individuals;
- Intelligent behavior has a genetic component, but is determined by the cultural environment (by domain of specific knowledge available to the individual).

2. The theory of multiple intelligences (Gardner, 1983, 2003)

In "Frames of Mind" (1983), Howard Gardner redefines intelligence. He says that human beings possess a multifaceted intelligence. Gardner argues that intelligence is not a simple feature, but a range of skills derived from many disciplines.

He considered that the problem lies in an educational system unable to handle all these intelligences in a classroom. In "Unschooled Mind: How Children Think and How Schools Should Teach (1991)," as in "Multiple Intelligence. The Theory in Practice (1993), "he addresses different learning styles and suggests that the educational system be adapted to learning styles of all children, so that they are not forced to learn in a traditional way. Gardner argues that the problem of academic failure is not due to student or teacher capacity, but the system of measurement used to examine the capacity. In these volumes Gardner suggests various ways in which teachers might use his theory to teach and assess students.

Starting from the limits of general ability theory, Gardner (1983, 1999, 2003) developed the so-called model of multiple intelligences. The model was then improved and described in "Cinq formes d'intelligence pour mieux affronter le futur".

According to his theory, the multidimensional construct of intelligence consists of seven distinct types of intelligences: linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal,

intrapersonal, and natural. Later, as I said above, he developed the concepts of existential and spiritual intelligence.

His theory has enjoyed international recognition and has been adopted in several schools in the U.S. and Europe as an educational policy.

Through valuable contributions that he had in the conceptualization of intelligence, Gardner's model is an alternative to the theory of the g factor (Mih, 2010).

The general purpose of educational interventions developed on the theory of multiple intelligences is - the accumulation of knowledge and skills acquired by training as many types of intelligence.

This theory has risen in value as it was faced with reality. The first use would be linked to education, both in the teaching and knowledge assessment. The second, of the utmost importance, is related to professional orientation.

Some observations have allowed the establishment of lists of occupations associated with dominant forms of intelligence. The following table seeks to illustrate these associations.

Another possibility to reflect on a person's professional future is to identify the importance of intelligence given in our society and trying to imagine the future importance that it might have.

For example, we are currently living in a society pulled back on itself, in which <<every man for himself>> is the supreme value.

Therapeutic approaches of any kind are multiplied, competition values have surpassed those of cooperation.

Intelligence	Professions examples	Personality
Interpersonal	Administrator - Nurse – Seller – Sociologist - Mediator	Mother Teresa
Intrapersonal	Theologian – Psychologist – Planner – Entrepreneur	Carl Gustav Jung,
Kinesthetic	Mechanic - Choreographer - masseur - Jeweler - Coach - Surgeon	Thomas Edison, Constantin Brâncuşi
Linguistics	Librarian - Writer - Lawyer - Secretary - comedian - Singer	William Shakespeare, Mihai Eminescu
Logical-mathematical	Accountant - Economist - Computer scientist - Engineer	Henry Coandă, Albert Einstein

Spatial	Architect – Pilot - Urban planner – Cartographer - Graphic designer - Artist	Pablo Picasso
Musical	Musician - Sound Engineer - Head of the orchestra - DJ	Ray Charles, Dumitru Zamfir
Naturalist	Geologist - Explorer - Veterinary - Meteorologist - Biologist	Jacques Cousteau

Viorel Mih however brings into question a limit of the theory of multiple intelligences, namely, the absence of predictive empirical data to support or test the theory as a whole.

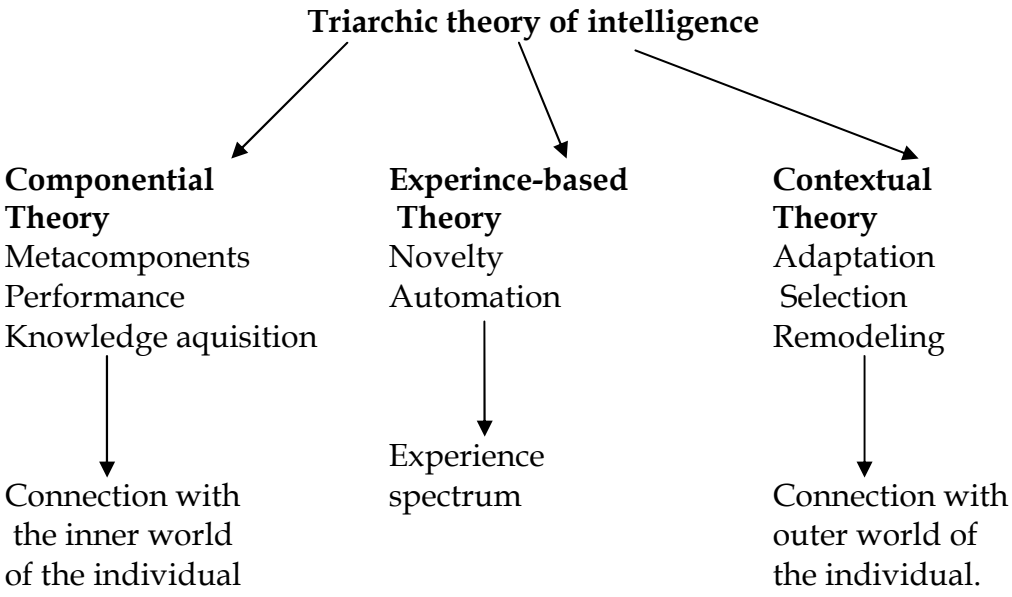
3. Triarchic theory of intelligence

Sternberg believes that people resort to the same cognitive processes regardless of the type and content of the problems they face.

After multiple studies, Sternberg has identified three general components involved in any type of problem solving: metacomponents, parts procurement and the performance ratio. These are information basal processes acting on sensory information.

Sternberg's triarchic theory's objective is to specify the the mental mechanisms behind intelligent behavior. The basic concept of this theory is that selectivity, according to the author refers to the individual decision to allocate at a certain time, cognitive resources to priority - process some specific content of a task. It has three sub-components: contextual theory, experience-based theory and componential. All this leads to the explanation of intelligentbehavior.

Figure 1: Triarchic theory of intelligence (Sternberg, 1985)



- Conceperea unor programe în cadrul cărora să nu dobândească numai anumite cunoştinţe despre diverse fenomene sau probleme, ci şi un stil de abordare a lor;
- Formarea şi exersarea unor abilităţi de monitorizare şi control ale procesului de învăţare.
- Componential Theory-its purpose is to identify mechanisms of information processing that characterizes the performance of intelligent behavior. The role of these mechanisms (components) is to select and decide which information is relevant for to achieve a specific goal. Thus they involve permanent decisions to make with certain content and to ignore others.
- Experience-based Theory – expresses the idea that intelligent behavior is strongly influenced by the subjects experiences. Different individuals with different experiences resort to different processing in a specific task.
- Contextual Theory - the relationship between intelligent behavior and contextual / the outer world of an individual. According to this theory, there are three ways of interaction with the environment: adaptation, shaping the environment, environmental change.

- Intelligent behavior results from a balance between adaptation to the environment, shaping it and changing it.

- **The level of intelligence of an individual is given by the way he strikes a balance between these three processes to adjust its resources to environmental demands.**
- sternberg and his collaboraters distinguish three types of thinking skills that lead to the development of successful intelligence:
- analytical skills;
- creative skills;
- practical skills.

This theory emphasizes the fact that multiple skills are often underutilized in school because education tends to exploit predominantly the analytical component and retrieval systems and less the creativity and practical skills.

The usefulness of this theory in education resulting from the following:

- Encourage individuals to capitalize on the strengths and compensate on weaknesses;

- It facilitates different approaches of materials to learn and understand;

- Increased motivation through attractive presentation materials.

Viorel Mih – gives a few suggestions through which the teacher could improve students intelligent behavior (based on the Triarchic Theory of Intelligence):

- Taking it to real problems, current interest;

- General cognitive learning strategies that students may use in solving large classes of problems;

- Development of metacognitive skills to students (planning, monitoring, evaluation) to help them adapt their cognitive strategies depending on the problematic situation they are facing;

- Design of programs in which to acquire not only some knowledge about various phenomena and problems, but also a style to approach them; - Training and practice of monitoring and control skills of the learning process.

Conclusions

Both theories presented are not educational methods, but they interest educators because now more than ever, the speed of scientific and technological discoveries does not only offer facilities, it also causes difficulties for some areas that need new knowledge. It depends on the

existence of a parallelism between the abundance of theories and their transfer in the fields of application.In our opinion, education is one area where they could successfully transfer these theories, as well as that of career counseling and guidance.