

ТЕОРИЯТА ЗА МНОЖЕСТВЕНИТЕ ИНТЕЛИГЕНТНОСТИ И ОБРАЗОВАТЕЛНАТА ПРАКТИКА

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MULTIPLE INTELLIGENCES THEORY AND EDUCATIONAL PRACTICE

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ABSTRACT

*After years of research, Howard Gardner proposed a new theory and definition of intelligence in his 1983 book entitled *Frames of Mind*. The basic question he sought to answer was: Is intelligence a single thing or various independent intellectual faculties? Gardner studied intelligence in a systematic multi-disciplinary and scientific way, drawing from psychology, biology, neurology, sociology, anthropology, and the arts and humanities. This resulted in the emergence of his *Theory of Multiple Intelligences*. Gardner's work around multiple intelligences has had a profound impact on thinking and practice in education. In this paper the focus will be on Multiple Intelligences ideas, some criticism and implications for education.*

Key words: *multiple intelligences, ability, criteria, misinterpretations, benefit, education*

INTRODUCTION

The notion of intelligence has a profound effect on one's social status, educational opportunities and career choices. Even though how many of us are able to define what intelligence is. Most people think that intelligence is what traditional IQ tests measure. In 1983 Howard Gardner changed the way we look at the intelligence with his classic work "Frames of Mind. The theory of multiple intelligences". Written as a book for psychologists and psychometricians it has had an influence far greater than Gardner intended. His ideas have been embraced widely by a great number of educational theorists and applied in preschool, higher, vocational and adult education. He has been in Smith and Smith's terms, a paradigm shifter. For more than twenty years Gardner and other "multiple intelligences specialists" have continued to research the theory and its implications for education in general, curriculum development, teaching and assessment. H. Gardner is currently professor of cognition and education at the Harvard Graduate School of Education and adjunct professor of neurology at the Boston University School of Medicine.

MULTIPLE INTELLIGENCES IDEAS

Howard Gardner has been part of the Project Zero research team on arts education since 1967. The mission of the project is to understand and

improve learning, thinking, and creativity in the arts, as well as humanistic and scientific disciplines, at the individual and institutional levels. It developed as a major research center for education. A key moment came with the establishment of the Project on Human Potential in the late 1970s to assess the state of scientific knowledge concerning human potential and its realization. The result was *Frames of Mind* (1983) - Gardner's first full-length statement of his theory of multiple intelligences (MI).

In the introduction to the 10th anniversary edition of *Frames of Mind* Gardner states, "in the heyday of the psychometric and behaviorist eras, it was generously believed that intelligence was a single entity that was inherited; and that human beings – initially a blank state – could be trained to learn anything, provided it was presented in an appropriate way. Nowadays an increasing number of researchers believe precisely the opposite; that there exists a multitude of intelligences, quite independent of each other; that each intelligence has its own strengths and constraints" (Gardner 1993, xxii)

According to the traditional view, intelligence is a uniform cognitive capacity people are born with. Intelligence level does not change over a lifetime. It consists of ability in logic and language and can be easily measured by short-answer tests.

Gardner defined intelligence in a much broader way as "a biopsychological potential to

process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture.” (Gardner 1999, 34) According to him all human beings have multiple intelligences in varying amounts. These intelligences are located in different areas of the brain and can either work independently or together. Each person has a different intellectual composition. Gardner’s model is based upon research related to eight criteria, covering neurological, evolutionary, cognitive, psychometric, developmental, and psychological factors related to intelligence.

In order to make a clear distinction between an intelligence and a talent or skill, Gardner identified the following basic criteria of “candidate intelligences”:

1. Potential for brain isolation by brain damage. For example, the location of damage to the brain, such as might occur from a stroke, may result in a person losing certain linguistic abilities.
2. The existence of idiot savants, prodigies and other exceptional individuals who demonstrate a high level of skill in one area. For example, by observing people who demonstrate extraordinary ability in a single intelligence, we can watch intelligences in relative isolation.
3. An identifiable core operation or set of operations. Musical intelligence consists of sensitivity to melody, harmony, rhythm, and musical structure. Linguistic intelligence consists of sensitivity to structure and syntax, vocabulary, rhythm, and literary tools.
4. A distinctive developmental history, along with a definable set of expert “end-state” performances. Expert athletes, poets, and salespersons demonstrate these performance characteristics.
5. An evolutionary history and evolutionary plausibility. Gardner hypothesizes that each intelligence has its roots in the evolution in human beings. Scientists find written notations in early cultures demonstrating the presence of linguistic intelligence. They also find early tool use showing bodily-kinesthetic intelligence.
6. Support from psychological experiments. Psychological tasks are a good way to see the intelligences working in isolation from one another. Subjects may master a specific skill, such a reading, but they do not transfer that success to logical-mathematical intelligence.
7. Support from psychometric findings. In spite of the fact that Gardner proposed his theory in opposition to psychometrics, he does suggest that

we can look at standardized tests for support of his theory.

8. Susceptibility to encoding in a symbol system. Codes such as language, maps, numbers, and facial expressions capture components of the various intelligences. (Gardner 1983, 62-69)

Candidates for the title “an intelligence” must meet all or a majority of the criteria mentioned above.

From these eight Gardner formulated his list of multiple intelligences.

Linguistic intelligence involves sensitivity to spoken and written language and the ability to use language for certain goals.

Logical-mathematical intelligence consists of capacity to think logically, carry out mathematical operations, and reason well in problem solving situations.

Musical intelligence is that special ability to recognize and compose musical pitches, tones, and rhythms. In other words, it is the ability to understand and express well musical forms.

Bodily-kinesthetic intelligence includes the ability to use different parts of the body and coordinate body movements in order to solve problems or create products.

Spatial intelligence involves the potential to recognize and use the patterns of wide space and more confined areas, the ability to create mental images and to use one’s imagination.

Interpersonal intelligence indicates the ability to understand the intentions, motivations and desires of other people and the ability to work effectively with others.

Intrapersonal intelligence entails the ability to understand oneself and to be able to use that information for regulating one’s own life.

In 1994-5 Gardner reviewed evidence for the existence of new intelligences. As a result he nominated three additional candidate intelligences: Naturalist, Spiritual and Existential and evaluated them in the context of the eight criteria. Gardner added Naturalist intelligence to the list because it meets the criteria. He defined it as an ability to recognize and classify plants, animals and other objects of the natural world, interact with natural and environmental materials and concepts. However, he was less sure about the other two. Exploring much more deeply the relation between intelligences, he introduced three distinct uses of the term “intelligence”: a property of all human beings; a dimension on which human beings differ; the way in which one carries out a task in virtue of one’s goals. (Gardner 2003)

According to Gardner multiple intelligences rarely operate independently. They are used at the same time and tend to compliment each other as people develop skills or solve problems. The big challenge “is how to best take advantage of the uniqueness conferred on us as a species exhibiting several intelligences.” (Gardner 1999, 45)

MI THEORY – CRITICISM, ISSUES AND MISINTERPRETATIONS

Since the publication of *Frames of Mind* in 1983 Gardner’s MI theory has come under some criticism. There has been a great deal of discussion, various criticisms of, and problems around Gardner’s ideas of multiple intelligences. In this section of the paper the focus will be on some key questions that have been raised in debates.

1. The criteria. According to J. White there are issues around the individual criteria, for example do all intelligences involve symbol systems; how the criteria to be applied; and why these particular criteria are relevant. I respect of the last fundamental question, White states that he has not been able to find any answer in Gardner’s writings. Indeed, Gardner himself has admitted that there is an element of subjective judgment involved. “I can’t pretend that the criteria were establish a priori; rather there was a constant fitting and refitting of what I was learning about human abilities with how best to delineate what ultimately became eight criteria. I feel that the definition and the criteria are among the most original parts of the work. (Gardner 2003)

2. The definition. Critics of MI theory maintain that Gardner’s work is not new, and that instead of the traditionally used words like “ability” he uses the word “intelligence”. Morgan, (1996), refers to Gardner’s approach of describing the nature of each intelligence with terms such as abilities, sensitivities, and skills as evidence of the fact that the “theory” is really a matter of semantics rather than new thinking on multiple constructs of intelligence. Nevertheless, he admits that identifying these various abilities and developing a theory that supports the many factors of intelligence has been a significant contribution to the field. Furthermore, he believes that MI theory has proven beneficial to schools and teachers and it may help explain why students do not perform well on standardized test. Defenders of MI theory argue that the traditional definition of intelligence is too

narrow, and a broader definition more accurately reflects the differing ways in which people think and learn. Gardner claims that by calling linguistic and logical-mathematical abilities intelligences, but not artistic, musical, athletic, etc. abilities, the latter are neglected. In addition, the confusion of intelligences with learning styles is a misinterpretation of the theory. He talks about perceptual learning styles. For example, two individuals can develop their musical intelligence in different ways. The preferred learning style for the first person is auditory (s/he listens to music and then tries to play what s/he hears), while the preferred learning style for the second one is visual (s/he studies and reads sheet music and then sits down to play).

Other misinterpretation is the belief that an intelligence is the same as a domain or a discipline. (e.g. musical intelligence is equal to mastery of a certain musical genre or role). Gardner describes a domain as a culturally relevant, organized set of activities characterized by a symbol system and a set of operations. For example, dance performance is a domain that relies on the use of bodily-kinesthetic and musical intelligences. (Gardner 1995)

3. Empirical evidence. Some critics argue that there is little empirical evidence to support the validity of the IM theory, that Gardner’s ideas derive rather more strongly from his own intuitions and reasoning than from a comprehensive and full grounding in empirical research. Gardner defends the empirism of the theory by referring to the numerous laboratory and field data that contributed to its development and the ongoing re-conceptualization of the theory based on new scientific data. “At the time that MI theory was introduced, it was very important to make the case that human brains and human minds are highly differentiated entities. It is fundamentally misleading to think about a single mind, a single intelligence, a single problem-solving capacity. And so, along with many others, I tried to make the argument that the mind/brain consists of many modules/organs/intelligences, each of which operates according to its own rules in relative autonomy from the others. Happily, nowadays, the argument for modularity has been well made...but it is time to revisit the issue of the relationship between general and particular intelligence. This revisiting can and is being done in various intriguing ways by psychologist R. Case, philosopher T. Fodor, the team of M.

Houser, N. Chomsky and T. Fitch, electrophysiological and radiological, and neural imaging studies. (Gardner 2003)

While there may be some significant questions and issues around H. Gardner's theory, it still has had utility in education. It has helped a significant number of educators to question their work and to encourage them to look beyond the narrow confines of the dominant discourses of skilling, curriculum and testing and give them a basis to broaden their focus.

4. Theory's application in educational practice. Some critics argue that the theory's definition may lead to the belief that all human beings are equally intelligent, but in large part this is based on misunderstanding. According to Gardner, there are different kinds of intelligence and none is better or more important. However, people have differing abilities within these types of intelligences. For example, two people who are good at mathematics both display logical-mathematical intelligence, but at no point does the theory say that all people with logical-mathematical intelligence are equally intelligent.

Other critics say that IM theory is impractical. Educators faced with overcrowded classrooms and lack of resources may see IM theory as utopian. Widespread adoption of MI model would make it difficult to compare and classify students' skills and abilities across classrooms. Gardner claims that on the practical level "multiple intelligences" should not be an educational goal. Educational goals need to reflect one's own values, and these can never come simply or directly from a scientific theory.

BENEFITS OF APPLYING MI THEORY

Many educators have incorporated MI theory into their work. The MI approach encourages teachers to regard intellectual ability potential more broadly. Teachers are able to see that visual arts, music and dance can be just as valuable to students' understanding of the world they live in as traditional academic subjects. Through the serious and in-depth study of just a few subjects, rather than a minimal amount of attention to many subjects, Gardner believes that students will develop a passion for exploring truly profound ideas. The ultimate goal of his theory is to increase students' understanding. For Gardner the biggest enemy of good education today is the pressure to cover vast amount of material that converts school to a verbal memory routine.

No direct educational implications follow from MI theory, but if individuals differ in their

intellectual profiles, it makes sense to take this fact into account.

The practical application of the theory varies widely. Psychology does not directly dictate education, "it merely helps one to understand the conditions within which education takes place." (T. Hatch and H. Gardner 1999, xxiii) Many educators, researchers, consultants and expert teachers have responded positively to Gardner's ideas because "...the theory validates educators everyday experience: students think and learn in many different ways. It also provides educators with a conceptual framework for organizing and reflecting on curriculum assessment and pedagogical practices. In turn, this reflection has led many educators to develop new approaches that might better meet the needs of the range of learners in their classrooms." (Kornhaber 2001, 276)

Benefits for teachers

The theory broadens the vision of education. Teachers acknowledge that students learn in different ways and thus the different kinds of intelligence would allow different ways of teaching, rather than one. They need to attend to all intelligences, not just the first two – linguistic and logical-mathematical.

Teachers understand how students are intelligent as well as how intelligent they are. However MI theory is not intended to provide new IQ-like labels for students.

Applying MI theory offers opportunities for learning based on deep understanding and students' needs, interests and talents. The multiple intelligences classrooms acts like the "real" world. Students become more active and involved learners. As M. Kornhaber has noted the theory involves educators opting "for depth over breadth."

Benefits for students

Students begin to understand how they are intelligent. When they understand the balance of their own multiple intelligences they begin to manage their own learning and to value their individual strengths.

Students are able to demonstrate and share their strengths. Developing strengths gives a student the motivation to be a "specialist". This can in turn lead to increased self-esteem.

Teaching for understanding helps students accumulate positive educational experience and capability for answering essential questions and creating solutions to problems in life. Applying

MI theory allows students to use their strengths, to demonstrate what they have learned.

Project SUMIT (Schools Using Multiple Intelligences Theory) has examined the performance of a number of schools. M. Kornhaber and her colleagues at the project have concluded that MI theory has helped educators to reflect on their practice, and given them a basis to broaden their focus and to attend to what might assist people to live their lives well. Project SUMIT (2000) uses the metaphor of Compass Points – ‘routes that educators using the theory have taken and which appear to benefit students’. They have identified the following markers that characterized schools applying MI theory.

Culture: support for diverse learners and hard work. Acting on a value system, which maintains that diverse students can learn and succeed, that learning is exciting, and that hard work by teachers is necessary.

Readiness: awareness-building for implementing MI. Building staff awareness of MI and of the different ways that students learn.

Tool: MI is a means to foster high quality work. Using MI as a tool to promote high quality student work rather than using the theory as an end in and of itself.

Collaboration: informal and formal exchanges. Sharing ideas and constructive suggestions by the staff in formal and informal exchanges.

Choice: meaningful curriculum and assessment options. Embedding curriculum and assessment in activities that are valued both by students and the wider culture.

Arts. Employing the arts to develop children’s skills and understanding within and across disciplines.

CONCLUSION

Howard Gardner’s theory has served as a turning point for a reconsideration of the educational practice of the last century. It challenged traditional beliefs in the fields of cognitive science and education. As Gardner (1999) writes “The theory of multiple

intelligences has helped break the psychometricians century long stranglehold on the subject of intelligence”. He is not the first person to suggest that there is more than one intelligence but his model is distinguished from other theories by its breadth, its scientific basis, and its educational implications. Gardner’s work has been marked by a desire not to just describe the world but to help to create the conditions to change it.

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