

CONSTRUCTIVISM & STUDENT CENTERED LEARNING

10. THE THEORY OF MULTIPLE INTELLIGENCES

10.1. Howard Gardner's Background

Howard Earl Gardner is an American developmental psychologist and the John H. and Elisabeth A. Hobbs Professor of Cognition and Education at the Harvard Graduate School of Education. The author of over twenty books translated into over thirty languages, he is best known for his theory of multiple intelligences, as outlined in his book *Frames of Mind: The Theory of Multiple Intelligences*.

Gardner was inspired by his readings of Jean Piaget to be trained in developmental psychology. He studied neuropsychology with Norman Geschwind and psycholinguistics with Roger Brown. During his undergraduate years, Gardner worked with renowned psychoanalyst Erik Erikson. In 1965, Gardner received a Bachelor of Arts degree in Social Relations from Harvard University. His undergraduate thesis was titled *The retirement community in America*. From 1965 to 1966, he read philosophy and sociology at the London School of Economics. He was awarded a Ph.D. degree in Social and Developmental Psychology from Harvard University, in 1971, for his thesis titled, *The Development of Sensitivity to Figural and Stylistic Aspects of Paintings*. In 1986, he began teaching at the Harvard Graduate School of Education. While he is widely traveled and conducted research in China throughout the 1980s, his entire adult career has been spent in Cambridge, Massachusetts. Since 1995, the focus of his work has been on the Good Work Project, now known as the Good Project. Gardner is currently a board member at Amherst College, the Museum of Modern Art in New York City (MoMA), and the American Philosophical Society (APS). He previously served on the board of the Spencer Foundation for 10 years (2001-2011).

According to Gardner's theory of multiple intelligences, humans have several different ways of processing information and these ways are relatively independent of one another. The theory is a critique of the standard intelligence theory, which emphasizes the correlation among abilities. Since 1999, Gardner has identified eight intelligences: linguistic, logic-mathematical, musical, spatial, bodily and kinesthetic, interpersonal, intrapersonal, and naturalistic. Gardner is informally considering two additional intelligences, existential and pedagogical.

10.2. Theory of Multiple Intelligences

The theory of multiple intelligences is a theory of intelligence that differentiates it into specific (primarily sensory) modalities, rather than seeing intelligence as dominated by a single general ability. This model was proposed by Howard Gardner in his 1983 book, *Frames of Mind: The Theory of Multiple Intelligences*. Gardner articulated seven criteria for a behavior to be considered an intelligence. These were that the intelligences showed: potential for brain isolation by brain damage, place in evolutionary history, presence of core operations, susceptibility to encoding (symbolic expression), a distinct developmental progression, the existence of savants, prodigies and other exceptional people, and support from experimental psychology and psychometric findings.

Gardner chose eight abilities that he held to meet these criteria: musical–rhythmic, visual–spatial, verbal–linguistic, logical–mathematical, bodily–kinesthetic, interpersonal, intrapersonal, and naturalistic. He later suggested that existential and moral intelligence may also be worthy of inclusion. Although the distinction between intelligences has been set out in great detail, Gardner opposes the idea of labeling learners to a specific intelligence. He suggested that each individual possesses a unique blend of all the intelligences. Gardner firmly maintains that his theory of multiple intelligences should empower learners, not restrict them to one modality of learning. Gardner further argues intelligence is categorized into three primary or overarching categories, those of which are formulated by the abilities. According to Gardner, intelligence is: 1) The ability to create an effective product or offer a service that is valued in a culture, 2) a set of skills that make it possible for a person to solve problems in life, and 3) the potential for finding or creating solutions for problems, which involves gathering new knowledge.

The Different Abilities

Musical–rhythmic and harmonic

This area has to do with sensitivity to sounds, rhythms, tones, and music. People with a high musical intelligence normally have good pitch and may even have absolute pitch, and are able to sing, play musical instruments, and compose music. They have sensitivity to rhythm, pitch, meter, tone, melody or timbre.

Visual–spatial

This area deals with spatial judgment and the ability to visualize with the mind's eye. Spatial ability is one of the three factors in the hierarchical model of intelligence.

Verbal–linguistic

People with high verbal-linguistic intelligence display a facility with words and languages. They are typically good at reading, writing, telling stories and memorizing words along with dates. Verbal ability is one of the most prominent abilities. This type of intelligence is measured with the Verbal IQ in WAIS-III.

Logical–mathematical

This area has to do with logic, abstractions, reasoning, numbers and critical thinking. This also has to do with having the capacity to understand the underlying principles of some kind of causal system. Logical reasoning is closely linked to fluid intelligence and to general intelligence (*g* factor).

Bodily–kinesthetic

The core elements of the bodily-kinesthetic intelligence are control of one's bodily motions and the capacity to handle objects skillfully. Gardner elaborates to say that this also includes a sense of timing, a clear sense of the goal of a physical action, along with the ability to train responses. People who have high bodily-kinesthetic intelligence should be generally good at physical activities such as sports, dance, acting, and making things. Gardner believes that careers that suit those with high bodily-kinesthetic intelligence include: athletes, dancers, musicians, actors, builders, police officers, and soldiers. Although these careers can be duplicated through virtual simulation, they will not produce the actual physical learning that is needed in this intelligence.

Interpersonal

This area has to do with interaction with others. In theory, individuals who have high interpersonal intelligence are characterized by their sensitivity to others' moods, feelings, temperaments and motivations, and their ability to cooperate in order to work as part of a group. According to Gardner in *How Are Kids Smart: Multiple Intelligences in the Classroom*, "Inter- and Intra- personal intelligence is

often misunderstood with being extroverted or liking other people...". Those with high interpersonal intelligence communicate effectively and empathize easily with others, and may be either leaders or followers. They often enjoy discussion and debate. Gardner believes that careers that suit those with high interpersonal intelligence include sales persons, politicians, managers, teachers, counselors and social workers.

Intrapersonal

This area has to do with introspective and self-reflective capacities. This refers to having a deep understanding of the self; what one's strengths/ weaknesses are, what makes one unique, being able to predict one's own reactions/emotions.

Naturalistic

This area has to do with nurturing and relating information to one's natural surroundings. Examples include classifying natural forms such as animal and plant species and rocks and mountain types. This ability was clearly of value in our evolutionary past as hunters, gatherers, and farmers; it continues to be central in such roles as botanist or chef. This sort of ecological receptiveness is deeply rooted in a sensitive, ethical, and holistic understanding of the world and its complexities including the role of humanity within the greater ecosphere.

10.3. Use in Education & Criticism

Gardner defines an intelligence as bio-psychological 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. According to Gardner, there are more ways to do this than just through logical and linguistic intelligence. Gardner believes that the purpose of schooling should be to develop intelligences and to help people reach vocational and avocational goals that are appropriate to their particular spectrum of intelligences. People who are helped to do so, feel more engaged and competent and therefore more inclined to serve society in a constructive way.

Gardner contends that IQ tests focus mostly on logical and linguistic intelligence. Upon doing well on these tests, the chances of attending a prestigious college or university increase, which in turn creates contributing members of society. While many students function well in this environment, there are those who do not.

According to some, standard IQ tests measure knowledge gained at a particular moment in time and they can only provide a freeze-frame view of crystallized knowledge. They cannot assess or predict a person's ability to learn, to assimilate new information, or to solve new problems. Gardner's theory argues that students will be better served by a broader vision of education, wherein teachers use different methodologies, exercises and activities to reach all students, not just those who excel at linguistic and logical intelligence. It challenges educators to find ways that will work for this student learning this topic. James Traub's article in *The New Republic* notes that Gardner's system has not been accepted by most academics in intelligence or teaching. Gardner himself states that while Multiple Intelligences theory is consistent with much empirical evidence, it has not been subjected to strong experimental tests. Within the area of education, the applications of the theory are currently being examined in many projects. He feels that his opinions will have to be revised many times in light of actual classroom experience. Jerome Bruner called Gardner's "intelligences" "at best useful fictions," and Charles Murray and Richard J. Herrnstein in *The Bell Curve* (1994) called Gardner's theory "uniquely devoid of psychometric or other quantitative evidence."

However, in spite of its lack of general acceptance in the psychological community, Gardner's theory has been adopted by many schools, where it is often used to underpin discussion about learning styles, and hundreds of books have been written about its applications in education. Gardner himself has said he is uneasy with the way his theory has been used in education.