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# Introduction

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## The Artistry of Teaching *for*, *With*, and *About* Multiple Intelligences

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What is intelligence? How can we measure it? And once it's been measured, what should we do with it?

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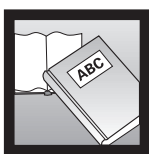
For many centuries humankind has been trying to understand the workings of the mind—sometimes through magic, sometimes through psychology, sometimes through sociology and anthropology, sometimes through religion, and sometimes through medicine. In the last thirty to fifty years, researchers from every walk of life, and from virtually every profession and academic discipline have begun a new set of explorations of a new frontier—the human mind and how it works. And they have been coming up with some astonishing discoveries, many of which have called into question all previous understandings about humanity and its potentials:

- **Right brain/left brain.** In 1981 Dr. Roger Sperry received a Nobel Peace Prize for his research into the different ways the left and right hemispheres of the brain process information. In the left hemisphere processing is more linear and sequential, while the right brain's processing tends to be more simultaneous and creative. These two modalities are brought together in a new area of research known as whole-brain processing.
- **Triune brain.** Dr. Paul MacLean, Chief of the Laboratory of Brain Evolution and Behavior at the National Institute of Mental Health in Washington, D.C., has done an important research study that suggests that within our one brain there are three separate brains that come from our earlier development as a species. As humans developed, and the need for more involved levels of thinking and mental processes were required,

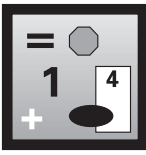
the brain simply grew new layers, each more complex and more intricate than its predecessor. While all three brains are still present in humans, they operate as a unified whole giving us the wisdom and potentials from our evolutionary past.

- **Intelligence can be enhanced and amplified.** In the past intelligence was viewed as a fixed, static entity. It was something you were born with and were stuck with for life. However, contemporary brain-mind researchers, such as Dr. Jean Houston, Dr. Robert Masters, Dr. Willis Harman, and Dr. Luis Machado, are suggesting that possibly the only limits to our intelligence are self-made and are related to our beliefs about what is possible. What is more, Israeli psychologist and researcher, Dr. Reuven Feuerstein, along with a number of others, suggest that at any age, and at almost any ability level, one's mental functioning can be improved. We can, apparently, all learn to be more intelligent by consciously activating perception and knowing on more levels than we usually use!
- **The brain is a like a hologram.** Dr. Karl Pribram of Stanford University has proposed a fascinating theory of the brain as a hologram. In a hologram, all of the basic information of the whole is stored within each part of the hologram, so that if it is in some way shattered, each piece contains and is capable of reproducing all of the information of the former whole. Pribram suggests that memory storage may work like this in the brain. Think for a moment about times when a very small fragment of a memory is able to bring back a full-sensory experience of something that may have happened in your childhood.
- **Intelligence is a multiple reality.** Dr. Howard Gardner and his team of Harvard researchers involved in Project Zero have postulated that there are many forms of intelligence—many ways by which we know, understand, and learn about our world—not just one. And most of these ways of knowing go beyond those that dominate Western culture and education, and they definitely go beyond what current IQ tests can measure. He proposed a schema of eight intelligences and suggests that there are probably many others that we have not yet been able to test!

It is the research of Howard Gardner on which this book, as well as *Eight Ways of Knowing*, is primarily based. Let me briefly summarize the eight intelligences Gardner identified:



**Verbal/linguistic intelligence** is responsible for the production of language and all the complex possibilities that follow, including poetry, humor, storytelling, grammar, metaphors, similes, abstract reasoning, symbolic thinking, conceptual patterning, reading, and writing. This intelligence can be seen in such people as poets, playwrights, storytellers, novelists, public speakers, and comedians.



**Logical/mathematical intelligence** is most often associated with what we call scientific thinking or inductive reasoning, although deductive thought processes are also involved. This intelligence involves the capacity to recognize patterns, work with abstract symbols (such as numbers and geometric shapes), and discern relationships and/or see connections between separate and distinct pieces of information. This intelligence can be seen in such people as scientists, computer programmers, accountants, lawyers, bankers, and of course, mathematicians.

The logical/mathematical and verbal/linguistic intelligences form the basis for most systems of Western education, as well as for all forms of currently existing standardized testing programs.



**Visual spatial intelligence** deals with the visual arts (including painting, drawing, and sculpting); navigation, mapmaking, and architecture (which involve the use of space and knowing how to get around in it); and games such as chess (which require the ability to visualize objects from different perspectives and angles). The key sensory base of this intelligence is the sense of sight, but also the ability to form mental images and pictures in the mind. This intelligence can be seen in such people as architects, graphic artists, cartographers, industrial design draftspersons, and of course, visual artists (painters and sculptors).



**Bodily/kinesthetic intelligence** is the ability to use the body to express emotion (as in dance and body language), to play a game (as in sports), and to create a new product (as in invention). Learning by doing has long been recognized as an important part of education. Our bodies know things our minds do not and cannot know in any other way. For example, our bodies know how to ride a bike, roller-skate, type, and parallel park a car. This intelligence can be seen in such people as actors, athletes, mimes, dancers, and inventors.



**Musical/rhythmic intelligence** includes such capacities as the recognition and use of rhythmic and tonal patterns, and sensitivity to sounds from the environment, the human voice, and musical instruments. Many of us learned the alphabet through this intelligence and the A-B-C song. Of all forms of intelligence, the consciousness altering effect of music and rhythm on the brain is probably the greatest. This intelligence can be seen in advertising professionals (those who write catchy jingles to sell a product), performance musicians, rock musicians, dance bands, composers, and music teachers.

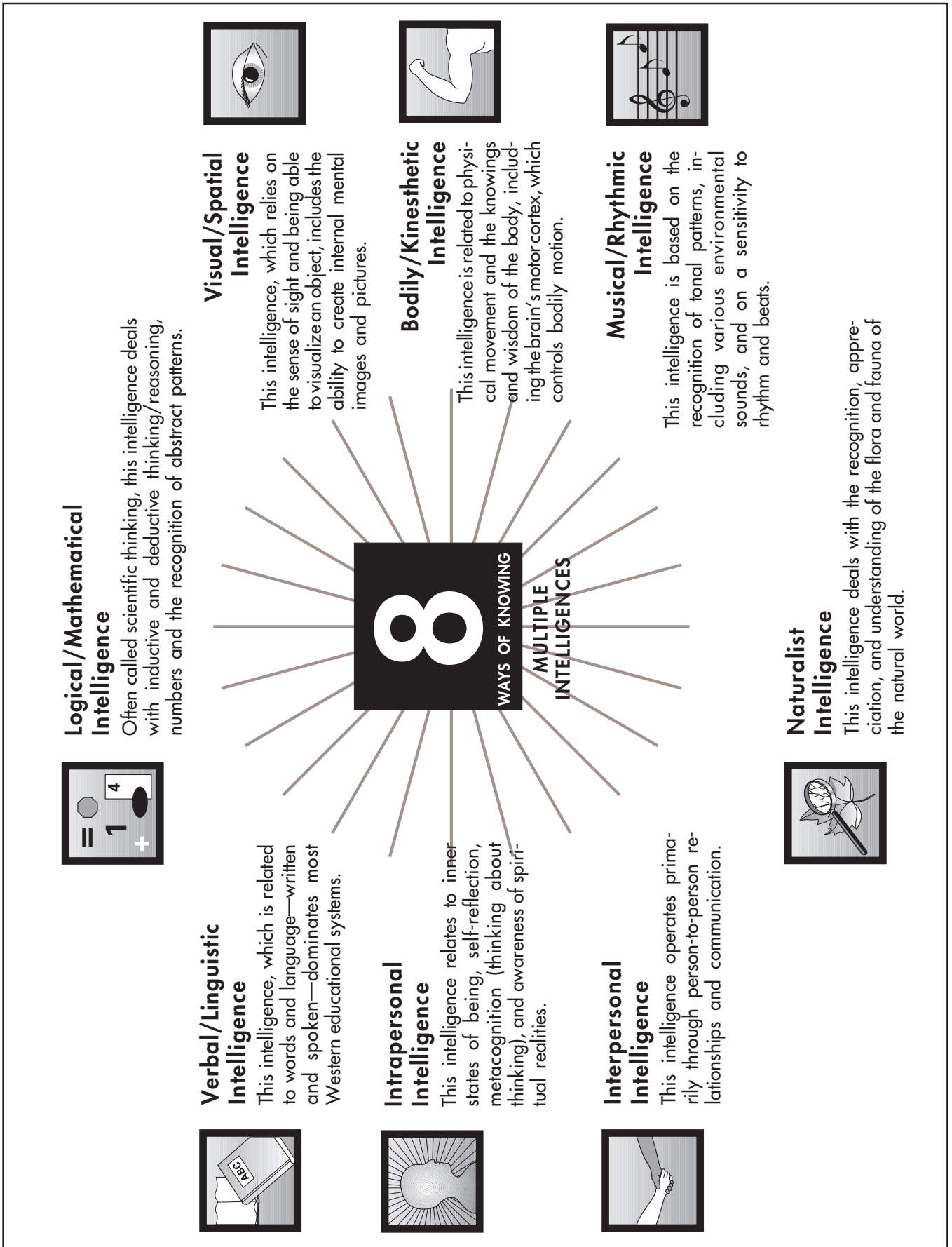


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