

# So You Think You're So Smart!

## An Introduction to the theory of Multiple Intelligence

In 1983, a Harvard education professor by the name of Harold Gardner created a new theory of intelligence. Previously, intelligence, as measured by the two most prominent tests, the Wechsler scales and the Stanford-Binet, has been assigned a number known as an "intelligence quotient" or "IQ." The higher your IQ, the smarter you were supposed to be. An IQ of 100 is considered average; anything below 70 is said to be some level of mental retardation, while anything above 130 is said to be superior, with all the intervening levels in between.

But those numbers apply only to a very narrow range of abilities. Dr. Gardner hypothesized that there are actually EIGHT forms of intelligence, not only a few of which are assessed by the traditional IQ test. According to this theory of "multiple intelligences," each of us can be more or less bright with respect to each of these non-overlapping types.

One of the major implications of Gardner's theory is that perhaps some or all of those who have had difficulties learning have those difficulties *not* because they are dull-witted but because their preferred way of learning---their type of intelligence---is not being accessed. The theory of multiple intelligence says that if we teach people in a way that is congruent with their preferred way to learn, then learn they will. At its farthest end, multiple intelligence theory casts the problem of "learning disabilities" in a new light. Perhaps, Gardner hypothesized, LD folks just needed to be instructed in a different manner. There are 8 different "potential pathways to learning."

## The Nine Types of Intelligence

- 1) *Linguistic intelligence* refers to being “word smart”
- 2) *Logical-mathematical intelligence* refers to being “number/reasoning smart.”
- 3) *Spatial intelligence* is intelligence expressed visually.
- 4) *Bodily-kinesthetic intelligence* is “body smart,” or the ability to process information via interaction with the surrounding space
- 5) *Musical intelligence* refers to heightened ability to learn via sounds, rhythms and patterns
- 6) *Interpersonal intelligence* These are those folks who are “people smart.”
- 7) *Intrapersonal intelligence* refers to people who have a heightened ability to be self-reflective and self-analytical
- 8) *Naturalist intelligence* is the ability to relate to the natural world

In order to facilitate learning, a subject should be taught in a way that accesses as many of these intelligences as possible. And if someone is having trouble learning from a traditional teaching style (which historically has heavily emphasized linguistic and logical-mathematical styles), then the same information should be presented in a teaching style that is more synchronized with the learner’s style of intelligence.

Moreover, each of us, in addition to our different levels of intelligence in each of these 8 areas, also has a ***preferred perceptual modality of learning***. There are 3 main learning styles:

- 1) Visual: visual learners learn best by seeing
- 2) Auditory: auditory learners prefer to hear things to learn them best

3) Kinesthetic: this type of learning style depends on physical interaction with the subject to be learned

**Visual learners** do best with lectures, and should sit at the front of the class in order to see the instructor's body language and in order to avoid any visual obstructions. Since they're likely to think best in pictures, illustrations, maps, videos, flipcharts and hand-outs are effective tools.

**Auditory learners**, on the other hand, while similar to their visual cousins in their need for lectures, learn by talking things through, through discussions and picking up on vocal tones and other auditory nuances. They will learn better if written information is read aloud to them.

**Kinesthetic/ tactile learners** learn best via a hands-on approach and need to actively investigate the subject at hand. Kinesthetic people often find it difficult to sit still for prolonged periods of time due to their strong need for activity and exploration.

But this is *only one* theory of how people learn. Another professor, Richard Felder, suggests that each of us falls somewhere on each of 4 different continua:

**1) Affective vs. Reflective learners:** While active learners retain learned information best when they do something with the new knowledge---e.g. discuss or apply it, or explain it to others--- reflexive learners prefer to "think things through" and prefer to work alone. Each type of learner should make sure that if their academic environment does not provide a sufficient amount of time with the way that they learn best, they should structure their study time so that it best fits their learning style

**2) Sensing vs. Intuitive Learners:** Most of us use both styles at different times. Sensing learners prefer to learn facts, while intuitive learners are more at home learning broader possibilities and relationships. Where sensing learners gravitate towards solving problems by standard methods and shy away from innovation, intuitive learners are attracted by innovation and dislike repetition. While sensing learners are patient with details and memorization, intuitive learners do better with understanding new concepts and abstractions and even mathematical formulations.

Sensing learners will remember best if they see how the new information connects to the real world; they need specific, real-world examples of the concepts being learned. Intuitive learners, on the other hand, will do better if they ask about the theories that link the facts that need to be learned.

**2) Visual vs. Verbal Learners** While visual learners learn best through what they see (pictures, diagrams, films, demonstrations, etc.), verbal learners better retain information that is gained from words, both written and spoken.

Visual learners can facilitate their learning experiences by finding or creating any visual representation of verbal course material. Things like diagrams, sketches, photos, flow charts, videos or computer displays will help. A concept map that lists main points enclosed in boxes and with arrows showing connections amongst concepts can be useful. Highlight any notes taken so that everything about one concept is the same color.

Verbal learners, on the other hand, can increase their learning by writing summaries or outlines of what they have learned. Sometimes it helps to work with peers and exchange verbal understanding of the information.

### **3) Sequential vs. Global Learners**

While a sequential learner learns best by advancing understanding in a stepwise, linear fashion, a global learner prefer to learn “in large jumps, absorbing material almost randomly without seeing connections, and then suddenly ‘getting it.’” A sequential learner needs a logical path to find a solution, whereas a global learner can solve problems once they have grasped the overall picture.

A sequential learner can assist his/her learning by making outlines. A global learner may feel frustrated or “dumb” because s/he can’t follow along in a logical step-by-step manner. To assist such a learner in getting to the point where everything suddenly all makes sense, a global learner might try skimming through an entire chapter to get an overview of the subject matter, then trying to relate the subject to what is already known or ask your teacher for help with this.