



Principal's Post

About Teaching and Learning

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What is intelligence?

Intelligence is highly valued in our society. Most of us recognize intelligence when we see it. We all know someone who has “street smarts” or “understands how things work”. Surely being “smart” means having certain observable characteristics such as the ability to learn and adapt, or to understand, or to thrive in a wide range of environments. But what is it really? How do we define intelligence? And how does our definition of intelligence influence education?

The Oxford Dictionary defines intelligence as the ability to acquire and apply knowledge and skills.

M. Anderson, an educational psychologist, links intelligence to the brain’s ability to process stimuli and believes that “(Intelligence is) *that facet of mind underlying* our capacity to think, to solve novel problems, to reason and to have knowledge of the world.” (Anderson, J Child Psychology Psychiatry. 2001 Mar;42(3):287-98. Review)

Alfred Binet, the psychologist who invented the intelligence test (IQ) defines intelligence as “judgement, otherwise called good sense, practical sense, initiative, the faculty of adapting one’s self to circumstances.”

For many years a person’s IQ (intelligence quotient) was seen as a fixed capacity. One was born with a certain limited cognitive ability that remained the same throughout one’s life. Intelligence was narrowly recognized as mathematical, logical and linguistic ability. School curricula were developed based on this idea. Thus, successful students were only those who had strong language and math abilities.

Howard Gardener, a Harvard psychologist and neuroscientist, defines intelligence as:

- The ability to create an effective product or offer a service that is valued in a culture;
- A set of skills that make it possible for a person to solve problems in life;
- The potential for finding or creating solutions for problems, which involves gathering new knowledge.

In his 1983 book, *Frames of Mind*, Gardner proposed the theory of multiple intelligences. He challenged the notion of one central “computer”, or only one part of our brain that processes how “...we perform in every sector of life. In contrast, a belief in multiple intelligences assumes that we have a number of relatively autonomous computers—one that computes linguistic information, another spatial information, another musical information, another information about other people, and so on. (www.multipleintelligencesoasis.org)

In other words, there are different parts of the brain that function in different ways. They work independently or together to enable us to interact with and respond to the world in a variety of ways. All human beings have multiple intelligences but each person has a unique combination with one or two dominant intelligences. Recognizing multiple intelligences has strong implications for teaching and learning. Intellect is not fixed, or limited to certain subjects or concepts. School programs can be structured to nurture and strengthen multiple intelligences through differentiated lessons, collaboration and project based learning. These strategies allow students to demonstrate multiple ways of understanding and performing.

The 9 intelligences are listed below along with definitions and descriptions of learning strategies for each type of intelligence.

- **VISUAL/SPATIAL** - children who learn best visually and organizing things spatially. They like to see what you are talking about in order to understand. They enjoy charts, graphs, maps, tables, illustrations, art, puzzles, costumes - anything eye catching.
- **VERBAL/LINGUISTIC** - children who demonstrate strength in the language arts: speaking, writing, reading, listening. These students have always been successful in traditional classrooms because their intelligence lends itself to traditional teaching.
- **MATHEMATICAL/LOGICAL** - children who display an aptitude for numbers, reasoning and problem solving. This is the other half of the children who typically do well in traditional classrooms where teaching is logically sequenced and students are asked to conform.
- **BODILY/KINESTHETIC** - children who experience learning best through activity: games, movement, hands-on tasks, building. These children were often labeled "overly active" in traditional classrooms where they were told to sit and be still!
- **MUSICAL/RHYTHMIC** - children who learn well through songs, patterns, rhythms, instruments and musical expression. It is easy to overlook children with this intelligence in traditional education.
- **INTRAPERSONAL** - children who are especially in touch with their own feelings, values and ideas. They may tend to be more reserved, but they are actually quite intuitive about what they learn and how it relates to themselves.
- **INTERPERSONAL** - children who are noticeably people oriented and outgoing, and do their learning cooperatively in groups or with a partner. These children may have typically been identified as "talkative" or "too concerned about being social" in a traditional setting.

- **NATURALIST** - children who love the outdoors, animals, field trips. More than this, though, these students love to pick up on subtle differences in meanings. The traditional classroom has not been accommodating to these children.
- **EXISTENTIALIST** - children who learn in the context of where humankind stands in the "big picture" of existence. They ask "Why are we here?" and "What is our role in the world?" This intelligence is seen in the discipline of philosophy. (<http://web.cortland.edu/andersmd/learning/MI%20Theory.htm>)

For teachers and parents, our job is helping children to develop all of their capabilities to the fullest. Understanding each child's unique "intelligence composition" is a valuable tool in accomplishing this task.

 <p>VISUAL/SPATIAL navigator sculptor architect</p>	 <p>INTRAPERSONAL researcher novelist entrepreneur</p>	 <p>EXISTENTIALIST philosopher theorist</p>
 <p>MUSICAL/ RHYTHMIC musician composer disk jockey</p>	 <p>INTERPERSONAL counselor politician salesperson</p>	 <p>BODILY/ KINESTHETIC athlete firefighter</p>
 <p>LOGICAL/ MATHEMATICAL engineer programmer accountants</p>	 <p>VERBAL/ LINGUISTIC journalist teacher lawyer</p>	 <p>NATURALIST environmentalist farmer botanist</p>