

OTHER CONTRIBUTIONS

Becoming Fully Intelligent

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This contribution examines the shortcomings of the traditional view of intelligence. It explores five expanded conceptions of intelligence which include: multiple intelligence theory, the triarchic theory of intelligence, emotional intelligence, holistic intelligence, and spiritual intelligence. As Gardner stated there is more to intelligence than scholarship, which is too often seen as the default and only measure of who or what is intelligent:

I believe that it is the standard definition of intelligence that narrowly constricts our view, treating a certain form of scholastic performance as if it encompasses the range of human capacities and leading to disdain for those who happen not to be psychometrically bright (Gardner, 1996, p. 205).

Holistic Education

I am a holistic educator who, in the humanist tradition, believes personal growth and the full development of each human's potential is the ultimate goal of education (DeCarvalho, 1991; Maslow, 1971; Morris, 1978; Rogers, 1969; Patterson, 1973). This growth and development should be not be on a purely intellectual level; it should also be one's emotional, psychological, creative, social, physical, and even spiritual levels. Were this mission to be fully embraced by schools and classroom teachers, we would cultivate a generation of talented, nurturing, thinking humans who possess the knowledge, skills, and dispositions to transform societies and create a compassionate, cooperative global community. Yes, I believe that education has the power to transform people, societies, and ultimately the world! However, one factor that limits students' realizing their full potential is traditional psychometric view of learning and intelligence. In this contribution I'll examine the shortcomings of this traditional view and explore six expanded views of intelligence: multiple intelligence theory, the theory of triarchic intelligence, successful intelligence, emotional intelligence, holistic intelligence, and spiritual intelligence. I'll also describe strategies that can be used by classroom teachers to develop each.

Limitation of Traditional Views of Intelligence

Traditional views of intelligence conceive it **as** an entity that can be defined, measured, and neatly described with a number. This number is calculated by giving multi-dimensional

humans a one-dimensional standardized test. Scores on these tests are compared to the scores of a large group of humans who are of the same age. They are then ranked according to where their scores fall within this same-age group. Percentile rankings that show the number of same-age humans who scored above and below them are given to each individual human. Finally, numbers are assigned to each percentile rank to indicate the degree of intelligence. Humans who have bigger numbers are thought to have more of it. Humans who have smaller numbers are thought to have less of it. This sacred number is called intelligence quotient or IQ.

This purely psychometric view offers a very narrow definition of what intelligence is or might be (Gardner 2000; Sternberg 1996). It also **raises** the question: If it could not be measured, could intelligence be said to exist at all? Put another way; if a tree fell in the middle of the forest and nobody was there to measure it, would that tree exist and would it have fallen?

Numbers, Hammers, and Learning

Some posit that intelligence is the ability to learn (Snow & Yalow, 1982). Well and good, but who gets to define learning? And who gets to decide how it should be described? Abraham Maslow once said (paraphrased from Maslow, 1966), “If the only tool you have is a hammer, you start treating the whole world as if it were a nail.” The only tool used to describe learning by psychometricians is the standardized achievement test in which students are made to read paragraphs and choose one of four bubbles to fill in with their number two graphite pencils. In our testing factories (formally called schools) they treat bubble-fillers (formerly called students) as so many nails coming down the assembly line. The assembly line workers (formally called teachers) are asked to use these fine shiny hammers (tests) to hit our children over the head time and time again, year after year until they no longer question; they simply follow directions and fill in bubbles.

Imagination, intuition, curiosity, individuality, and passion—the things that make us human, and the things that have led to our greatest human innovations—are pounded out of our students, so that they can be measured with sterile standardized instruments. All we are left with are numbers, lifelessly distributed along a bell-shaped curve.

Some students, usually in the higher social-economic classes, are better at obtaining high test numbers. These high-numbered bubble-fillers are put in fast-moving lines and allowed entrance into special programs and fine high-numbered learning factories. These high-numbered students become high-numbered adults, except now their numbers have to do with bank accounts, investment portfolios, and other such things. These high-numbered people eventually mate and have high-numbered children.

Low-numbered students, in contrast, are shuttled into regular, remedial, or special-ed programs, from which they have difficulty escaping. They work at McDonalds and Wal-Mart and low paying jobs, and have low-numbered children (Park, Turnbull, & Turnbull, 2002; Salend, 2004), and in this manner the circle of life continues. Efforts to raise their numbers, by means of excessive hammering (mind-numbing drill), show little promise.

For all the time, money, and energy we put into our numbers, they tell us very little—little about people as human beings, and little about intelligence or learning. If standardized

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achievement test scores are to be used, they should always be used with other types of measures when describing learning, achievement, or students' potential to perform. These other measures would include forms of authentic assessment such as teacher observations, field notes, students' products or performances, work samples, or students' self-evaluative descriptions. Of course, if any of this were done, the orderly nature of our society would be disturbed. But on the assumption—however naïve—that we want to develop full human beings, I will discuss some expanded views of intelligence.

Expanded Views of Intelligence

There is not a single entity that we can call intelligence. People are not more intelligent or less intelligent, but are intelligent in different ways. Below are described six expanded views of this entity we call human intelligence.

Gardner's Theory of Multiple Intelligence

Howard Gardner's book *Frames of Mind* (1983) was instrumental in getting schools to start thinking about intelligence in much broader terms. He defined intelligence as the ability to solve problems or create products which are valued within a culture setting. Instead of a single entity with many facets, Gardner's Theory of Multiple Intelligence (MI) identified eight different types of intelligence (see Figure 1).

Figure 1. Gardner's eight intelligences

- 1. Linguistic intelligence** is the ability to use words to describe or communicate ideas. Examples: poet, writer, storyteller, comedian, public speaker, public relations, politician, journalist, editor, or professor.
- 2. Logical-mathematical intelligence** is the ability to perceive patterns in numbers or reasoning, to use numbers effectively, or to reason well. Examples: mathematician, scientist, computer programmer, statistician, logician, or detective.
- 3. Spatial intelligence** is the ability to perceive the visual-spatial world accurately (not get lost) and to transform it. Examples: hunter, scout, guide, interior decorator, architect, artist, or sculptor.
- 4. Bodily-kinesthetic intelligence** is expertise in using one's body. Examples: actor, athlete, mime, or dancer.
- 5. Musical intelligence** is the ability to recognize and produce rhythm, pitch, and timber; to express musical forms; and to use music to express an idea. Examples:

composer, director, performer, or musical technician.

6. **Interpersonal intelligence** is the ability to perceive and appropriately respond to the moods, temperaments, motivations, and needs of other people. Examples: pastor, counselor, administrator, teacher, manager, coach, co-worker, or parent.
7. **Intrapersonal intelligence** is the ability to access one's inner life, to discriminate one's emotions, intuitions, and perceptions, and to know one's strengths and limitations. Examples: religious leader, counselor, psychotherapist, writer, or philosopher.
8. **Naturalistic intelligence** is the ability to recognize and classify living things (plants, animals) as well as sensitivity to other features of the natural world (rocks, clouds). Examples: naturalist, hunter, scout, farmer, or environmentalist.

Two simple ways in which a classroom teacher might use multiple intelligence theory: First, let students know that there are different ways to be smart and that it is okay to be good at some things and not good at others. As Robert Sternberg (1996) says, almost everybody is good at something; almost nobody is good at everything. I have seen many classrooms where teachers put up posters describing each of these types of intelligence. Some even expand this by asking students to think of other ways to be smart and then let them create additional posters. Second, create learning experience, activities, and assignments for your students that use these different ways of thinking. Try to incorporate each type of intelligence into your lessons and units (not always possible). By using these different ways of thinking to manipulate subject matter content students will see things from a broader perspective, learn more, and learn more deeply (Diaz-Lefebvre, 2006; Kornhaber, 2004).

Sternberg's Triarchic Theory of Intelligence

Robert Sternberg (1984) defines intelligence as the ability to adapt to and shape one's environment in order to meet one's needs or purposes (a form of problem solving). His Triarchic Theory of Intelligence (Sternberg, 1996), identifies three types of thinking that are used together to meet this end (see Figure 2).

Figure 2. Sternberg's triarchic theory of intelligence

- **Generative thinking.** You are able to generate many ideas, synthesize two or more ideas, create original ideas, think outside the box to find ideas that nobody else has considered, or utilize divergent thinking and inductive reasoning.

- **Evaluative thinking.** You are able to evaluate ideas, analyze ideas, organize ideas, compare ideas, or utilize convergent thinking and deductive reasoning.
- **Pragmatic thinking.** You are able to implement, apply, or adapt the ideas produced through generative and evaluative thinking to meet the demands of your particular situation.

Instead of eight intelligences like Gardner, Sternberg would say there are as many different types of intelligences as there are domains. Intelligence is a matter of using these three types of thinking to solve problems in a particular domain.

Classroom teachers can enhance learning by incorporating these three types of thinking into lessons and units (Sternberg & Grigorenka, 2000). By designing activities and assignments that invite students to generate ideas, evaluate or analyze ideas, and then apply or make their ideas work, teachers are able to provide a three-dimensional view of subject matter and utilize a variety of thinking processes. For example, in studying a unit on Malcolm X, Jane asks her 9th grade students to generate a list of possible solutions that Malcolm X might have used to deal with his continuing conflict with the Nation of Islam. In small groups they are then asked to evaluate the solutions, looking at the costs and benefits of each, in order to find the one they think would be the best. Finally, students might be asked to work out the details and construct a viable plan for solutions they chose. As you can see, these three thinking modes can be used across the curriculum.

Successful Intelligence

Sternberg has also described successful intelligence which he defines as “an integrated set of abilities used to attain success in life, however a person chooses to define success or however it might be defined within a particular sociocultural context” (Sternberg & Grigorenka, 2000, p. 6). Depending on what you value or your culture values, success might include one or more of kinds of accomplishments listed in Figure 3.

Figure 3. Different types of accomplishments

- Healthy relationships and family life
- Creative artistic freedom and expression
- Happiness, peace of mind
- An accumulation of wealth or material possessions
- Accomplishments: athletic, artistic, scholarly, business, political, scientific, etc.
- Power and importance
- Fame and prestige

- | |
|--|
| <ul style="list-style-type: none"> • Honor, integrity, and truthfulness • The ability to give to and nurture • Free time, freedom, and a lack of responsibilities • Developing or running a successful business or some other type of enterprise • Wisdom • Wholeness, spiritual gifts • Leadership roles |
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According to Sternberg (2003) there are three characteristics shared by successfully intelligent people: (a) they recognize their strengths and use them to compensate for their weakness; (b) they are able to adapt to, shape, and select their environments; and (c) they are able to use analytical, creative, and practical thinking to create products or performances, to solve problems, or to achieve their goals. As I have suggested elsewhere (Johnson 2001), teachers can address students’ strengths by teaching a variety of thinking skills and strategies and also by offering choices of how to demonstrate their learning (see Figure 4).

Figure 4. Alternative ways to demonstrate knowledge

<ul style="list-style-type: none"> • create a poem • put important items on a time line • create a semantic web • put events or ideas in categories • create and give a speech • weigh or measure • plan and perform a newscast • design a crossword puzzle • run an experiment 	<ul style="list-style-type: none"> • make a game or design a quiz show • create a sculpture or painting • create a radio drama • create a bulletin board • design a poster • design a survey • tape an interview • create a play 	<ul style="list-style-type: none"> • make a commercial • use dance or mime to express an idea • create a rap song • design a reading guide • find related issues • describe an idea using numbers • describe multiple viewpoints • write a newspaper article
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Students would be encouraged to complete assignments or projects in ways other than simple writing reports or answering homework questions. For example, one student might write and

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perform a dramatic re-enactment of an important event related to the integrated study, while another might demonstrate through visual art, while another might design a poster, while another might create a videotaped commercial.

Emotional Intelligence

Emotional intelligence (EI) is a type of social intelligence related to intrapersonal and interpersonal intelligence. It is the ability to monitor one's own and others' emotions, to discriminate among them, and to use that information to guide one's thinking and actions (Goleman, 1995). Goleman theorized that EI, much more so than IQ, determines success in the real-life world. EI involves abilities that can be categorized into five domains:

- **Self-awareness:** Observing yourself and recognizing a feeling as it happens (intrapersonal intelligence).
- **Managing emotions:** Handling feelings so that they are appropriate; understanding the origin of emotions; finding ways to handle negative emotions (fears, anxieties, anger, and sadness).
- **Motivating oneself:** Channelling emotions in the service of a goal; ability to delay gratification and stifle impulses to obtain a greater goal.
- **Empathy:** Sensitivity to others' feelings and concerns and taking their perspective; ability to appreciate the differences in how people feel about things.
- **Handling relationships:** Managing emotions in others; social competence and social skills (interpersonal intelligence).

All of the five domains described above can and should be addressed within a general education curriculum for the social and emotional well-being of our students. We can teach students to identify and become more aware of their own emotions and inner worlds (self-awareness). We can also teach them how to manage their emotions. That is, we can teach them healthy responses to their feelings of anger, anxiety, sadness, or other emotions. Students can be taught how to define goals for themselves and to describe the steps necessary to achieve those goals (motivating oneself). We too can help students develop empathy by helping them to make personal connections to the material being taught and by being empathetic ourselves. And finally, by including social and other interpersonal skills with other parts of the curriculum, we can help students to learn how to handle a variety of relationships. Interestingly, these are all goals of the holistic curriculum (Miller, 1996).

A Holistic View of Intelligence

A holistic view of intelligence reflects the principle of interconnectedness in regard to self, others, and the environment. Since we are interconnected with all things (Talbot, 1991); any action that would break down such interconnectedness by harming or taking from others would not be an "intelligent" act. To harm one is to harm us all. For example, creating a complex new missile system might be seen to be an intelligent act from a traditional point of view; it would take an immense amount of knowledge and education as well as the creativity and deductive reasoning necessary to incorporate a variety of complex components. But from

a holistic perspective, one would question the intelligence of creating a new weapons system in a highly volatile world. One would ask whether the resources might better serve other needs, such as medical care for the poor. Intelligent acts are only those that promote the common good. Similarly, a new luxury housing development may generate many millions of dollars in profits for a particular group or individual; however, if this were done at the expense of destroying forest or farm land for future generations it would not be an intelligent act.

Holistic intelligence (HI) then is the ability to solve problems in ways that nurture self, others, and the environment. Recognizing interconnectedness, holistic intelligence tends to emphasize collaboration over competition, sharing over hoarding, empowerment over domination, structure over control, and truth over manipulation. The characteristics or abilities listed in Figure 5 can be linked with holistic intelligence.

Figure 5. Characteristics of holistic intelligence

- You are able to distinguish between truth and falsehood.
- You perceive and consider activities that promote human good.
- You recognize our inter-dependence with all things.
- You perceive the whole instead of only discrete parts.
- You recognize the limitations of logic.
- You recognize and seek to integrate all parts of self in all that you do.

To develop holistic intelligence in a classroom, introduce real-life problem-solving activities whose answers are mediated by values such as kindness, compassion, honesty, cooperation, integrity, or fortitude. The efficacy of the answers generated for these real-life problems should always consider the greatest good for the greatest number.

Spiritual Intelligence

Howard Gardner (1999) has considered a 9th intelligence: Existential intelligence, sometimes known as spiritual intelligence, is concerned with issues regarding the nature of existence and ultimate issues. However, Gardner has concluded that spiritual intelligence doesn't meet the requirements of an intelligence (according to his criteria) and has not added it to his other eight. Others have also explored this area. Sisk and Torrance (2001) describe Spiritual Intelligence as the ability to use a multi-sensory approach to problem-solving and the ability to listen to your inner voice. Vaughan (2003) portrays spiritual intelligence to be a different way of knowing, a part of self that is concerned with the life of the mind and spirit and its relationship to being in the world. Zohar and Marshall describe it as

...the intelligence with which we address and solve problems of meaning and value, the intelligence with which we can place our actions and lives in a wider,

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richer, meaning-giving context, the intelligence with which we can assess that one course of action or one life-path is more meaningful than another. (Zohar & Marshall, 2001, pp 3-4).

Spiritual intelligence, as I will define it here, involves access to multiple dimensions of the self which put one in touch with experiences that transcend the self (see Tart 1996). It is access to the most complete range of states of consciousness. It includes altered states that transcend the usual senses, and most importantly, includes the capacity to see the seamless connect between self, others, and the universe. Whereas holistic intelligence sees the interconnectedness of all things, spiritual intelligence is a more intense experience of oneness. This is what Buddhist sometimes call the ground of being (Hanh, 1998) or what quantum physicists call implicate reality (Goswami, Reed, & Goswami, 1993). You see yourself as one living being in the context of all of life and you see all of life in the context of one living being.

My definition comes with an important caveat: at best it only points to what spiritual intelligence might be. Using words and the human mind is like trying to put smoke in a box. I also recognize that spiritual intelligence and holistic intelligence may overlap more than I have suggested.

So how does a teacher address spiritual intelligence within the classroom? In this day and age: very carefully. It is beyond the scope of this current article to explore all the ramifications of spiritual intelligence; however, I can offer two bits of advice. The first is to simply allow for space and silence for children to contemplate life. Second, I would encourage teachers to trust, validate, and begin to utilize their own intuitive impressions and other dimensions of self in solving problems, making decisions about students, designing curriculum and learning experiences, and sensing the emotional state and achievement status of students.

Transformative Education

If we perceive the purpose of our schools to be to train students or to give them the skills necessary to find employment, that is, to prepare worker bees for the great economic beehive, then we should focus solely on traditional forms of learning and intelligence that have students pushing about bits of information without regard to values, ideals, or consequences. But if we believe the purpose of our schools is to help students to self-actualize, to fully discover their unique talents and abilities as well as their passions and interests as do Carl Rogers (Rogers & Freiberg, 1994) Abraham Maslow (1971), Cecil Patterson (1973), and other humanistic educators; then we must incorporate multiple intelligence theory, the theory of triarchic intelligence, successful intelligence, and emotional intelligence into our curriculums as well. This would also enhance learning as well as helping to prepare generations of fully capable workers and competent decision-makers for our society. However, if we perceive the ultimate purpose of our schools to be the transformation of students, teachers, and ultimately society and the world, as do John Miller (2000, 1996), Parker Palmer (1993), Ramon Gallegos Nava (2001), Yoshiharu Nakagaw (2002), and other holistic educators; then we must recognize and begin to incorporate holistic intelligence and spiritual intelligence as well.

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