MULTIPLE INTELLIGENCES IN THE CLASSROOM

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This article attempts to provide a solution to teaching students with differences. Many teachers struggle with finding ways to reach individual learning styles and needs. One teaching method that can accommodate for this variety of learning styles is Howard Gardner's Multiple Intelligences. This article attempts to provide a brief overview of the eight multiple intelligences connected with Howard Gardner's theory. Each of the intelligences encompasses certain characteristics and these characteristics lend themselves to particular professions, discussed in the article. The article also suggests specific ways for educators to incorporate the intelligences into their daily lesson planning for practical use in the classroom. This, in turn, allows each child to learn in a way that is associated to his or her strengths, solving the age-old dilemma of how to meet the individual differences of individual students.

In order to address the need for different teaching strategies, we must first realize there are different learning styles. Howard Gardner was aware of this when he developed his theory of multiple intelligences. According to Gardner, there are eight kinds of intelligences. Howard Gardner's theory of multiple intelligences requires teachers to adjust their instructional strategies in order to meet students' individual needs.

The first of Gardner's intelligences is linguistic or verbal. Verbal intelligence involves the mastery of language. People with verbal intelligence tend to think in words and have highly developed auditory skills. They are frequently reading or writing. Their ability to manipulate language lends them to fields such as teaching, journalism, writing, law, and translation. Language enables them to be better at memorizing information. Verbal students are often great storytellers and joke tellers.

Linguistic intelligence enables one to pay special attention to grammar and vocabulary. They have great ability to use words with clarity. These people can use this to their own benefit either to explain, persuade, or entertain.

Those with linguistic intelligence memorize best using words. Another advantage is that they tend to be great at explaining, hence the amount of people with linguistic intelligence that are teachers. Additionally, there is their ability to analyze language and to create a better understanding of what people mean when using words.

In order for teachers to help linguistic learners progress, they need to use language that the student can relate to and fully comprehend. If used correctly, language can provide a bridge between the material and the learner. Having children write, read, and give oral reports about an element in their own lives such as sports, television, or popular bands develops their linguistic intelligence.

Music and language can be considered a common medium. Yet, they have evolved on separate courses. Musical intelligence, therefore, is the next of the multiple intelligences.

Musical intelligence makes use of sound to the greatest extent possible. Those with musical intelligence have a firm understanding of pitch, rhythm, and timbre. Through music, they are able to convey their emotions. Often, this intelligence is discovered at an early age. The individual differences between those with musical intelligence and those without are apparent from the day a child learns to sing. These students are usually able to read music, critique performances, and to use musical-critical categories.

Our culture is known to minimize the importance of music and music education. Teachers should foster musical intelligence by introducing "formal musical analysis and representation" (Gardner, 1983, p. 111). Music can act as a way of capturing feelings, of knowing and understanding feelings, which is an important part of educating children. Another reason musical intelligence should be valued is that it can be tied to other intelligences. For example, it relates to the logical-mathematical intelligence in that music also contains ratio and regularity, as well as mathematical patterns.

Mathematical-logical intelligence consists of the ability to detect patterns, reason deductively, and think logically. Children first explore this intelligence by ordering and re-ordering objects. They begin math using material objects such as marbles or M&Ms. After time passes, children are able to do math in their heads without the use of manipulatives. As this intelligence grows, the love of abstraction separates those with mathematical intelligence from the rest. They are able to follow long chains of reasoning very skillfully. These are usually the children who do well in the traditional classroom because they are able to follow the logical sequencing behind the teaching and are, therefore, able to conform to the role of model student. Another advantage is that they are able to calculate very quickly.

These characteristics often show up in early life. Idiot savants have shown great ability in the mathematical intelligence. Many are extremely gifted at calculating. Some have been called human calculators: memorizing long tables of information such as train schedules or financial newspaper columns.

Mathematicians and scientists-while considered having the same logical intelligence-have some major differences. The mathematician is interested in the abstract, while the scientist attempts to explain the physical reality. Mathematicians feel it is most important to recognize patterns wherever they may be, but the scientist is more concerned with explaining the physical universe. Like scientists, people with spatial intelligence often are less concerned with the abstract

Spatial intelligence gives a person the ability to manipulate and create mental images in order to solve problems. Spatial thinkers "perceive the visual world accurately, to perform transformations and modifications upon one's initial perceptions, and to be able to re-create aspects of one's initial perceptions, even in the absence of relevant physical stimuli"

(Gardner, 1983, p. 173). Spatial intelligence can lend itself to the ability of visual perception, while lacking in the ability to draw, imagine, or transform or vice versa.

Much of the ability of spatial intelligence grows out of the visual world, yet blind people can also form spatial intelligence. If an individual can "recognize an object from different angles, imagine movement among parts of a configuration, or think about spatial relations in which the body orientation of the observer is an essential part of the problem one is said to have spatial intelligence" (Gardner, 1983, p. 175).

Spatial intelligence empowers hunters and travelers-giving them better accuracy and less of a chance of getting lost. A navigator or guide possesses a great deal of this intelligence, as does an architect or lighting designer. People with spatial intelligence often like playing chess, a lot of color, and to imagine the world differently.

The role that spatial intelligence plays in the visual arts is evident. Painting and sculpting often rely on spatial thinking. An artist's style often depends on their ability to visualize and create from a blank canvas.

Children with spatial intelligence are best taught using pictures or photographs. It is often a good assessment to have them draw their ideas. These students also benefit from films, overheads, diagrams, and other such visuals.

As opposed to logical-mathematical, spatial deals much more with the concrete world. It deals with what we can see and feel. Another intelligence that deals with the concrete is bodily kinesthetic.

Bodily-kinesthetic intelligence entails the ability to understand the world through the body. These people can use their body in very expressive skilled ways for a distinct purpose. They have very fine motor skills of the fingers and hands and control of their gross motor movements. These characteristics go together with their ability to manipulate objects, and to carry out delicate movements using precise control.

These abilities lead people into professions such as surgeons, sculptors, carpenters, plumbers, athletes, dancers, and mimes. Dancers use "patterned sequences of nonverbal body movements that are purposeful, intentionally rhythmic and have aesthetic value in the eyes of those for whom the dancer is performing" (Gardner, 1983, p. 222). Performers are able to capture the intended emotion and express them through different mediums. Kinesthesis is the capacity to act gracefully and to apprehend directly the actions or the dynamic abilities of other people or objects. This is what makes people with bodily intelligence good at the performing arts. Another beneficiary of bodily intelligence is the athlete. Exceptional athletes are graceful, powerful, fast, and accurate, and they can use these abilities to develop precise timing to better their game.

Teaching children with bodily-kinesthetic intelligence can be optimized through the use of manipulatives and physical movement. These children like to touch things in order to learn, they usually cannot sit still for long. They enjoy keeping their hands busy; therefore different learning tools should be brought into the classroom to accommodate these students. These students may seem fidgety

during much of the class. Simply giving them something to keep in their hands might solve this problem. Corporations have seen this in their meetings, so they have brought "executive toys" into their meetings. Each member is given some sort of gizmo to keep his or her hands busy. It has been found to increase creativity and productivity significantly. The same effect could take place with bodily-kinesthetic students, and it may just be that they needed something in their hands to satisfy this urge and calm their brains so that thinking and learning can take place. Also from the body, rather than just the physical sense, is the emotional sense. An individual's sense of self, "his most personal feelings and aspirations, as well as that entity to which others respond in a special way because of their uniquely human qualities" can impact the way in which a person learns (Gardner, 1983, p. 235)

The interpersonal intelligence consists of the ability to understand, perceive and discriminate between people's moods, feelings, motives, and intelligences. Interpersonal intelligence shares many of its characteristics with intrapersonal intelligence. Intrapersonal deals more with the individual self. It is the ability to know oneself and to understand one's own inner workings. These personal intelligences are often seen as the highest achievement made by human beings. They are both information-processing capacities available to every human from infancy.

Those with interpersonal intelligences are often found in professions such as teaching, politics, religious leaders such as Gandhi or Martin Luther King Junior, salesmen, skilled parents, therapists, or counselors. Cult leaders and people like Adolf Hitler have been known to have high degrees of interpersonal intelligence, proving that it can also be used for things other than good.

People with intrapersonal intelligence are usually imaginative, original, patient, disciplined, motivated, and have a great deal of self-respect. This intelligence is developed from internal resources. In everyday class, children with intrapersonal characteristics need to be praised frequently. Much of the development of intrapersonal intelligence depends on how the student wishes to use it. It can be aided through imagination exercises. They could be given long-term projects with various stages that need to be checked before moving onto the next. This will help the student strengthen their abilities of patience and procedure. These students can see what needs to be done in their minds, then will make it happen.

The interpersonal intelligence can be fostered through having students work together. The learning and the use of a culture's symbol system leads to development of interpersonal intelligence. Much of the personal intelligences is basic and does not require much from others. Observation and experience are the most appropriate tools to further these intelligences.

Another intelligence that benefits from observation and experience is environmental or naturalist intelligence. Environmental intelligence is Gardner's latest, but probably not his last, intelligence. It involves the ability to understand nature's symbols, to respect the delicate balance that lets us continue to live. They

have a genuine appreciation of the aspects of nature and how they intertwine. They put the future of the world first and are concerned about how man could be destroying or disrupting our planet for future generations. People with naturalistic intelligence often show expertise in the recognition and classification of plants and animals.

Naturalists can be anyone from a molecular biologist to a traditional man who uses herbal remedies. George Washington Carver, Rachel Carson, and Charles Darwin are often considered to have had naturalist intelligence. A child who is exceptionally good at sorting and classifying rocks, insects, shells, or dinosaurs is another example of a naturalist.

These children often benefit from learning outdoors. Teachers can accommodate for them by planning activities such as: observing nature, labeling and mounting specimens from nature, noticing changes in the environment, sorting articles from nature, using binoculars or telescopes to study nature, nature hikes or field trips in nature, caring for pets, and so forth. These activities allow the student to have a hands-on experience with what they are most comfortable with doing.

All of the intelligences described throughout this article are a better way for teachers to understand and accommodate different learning styles. Teachers should structure the presentation of material in a style, which engages all or most of the intelligences. When teachers center lessons on the students' needs, it optimizes learning for the whole class. Teachers who teach towards the multiple intelligences realize the benefits such as active learners and successful students. Each of the intelligences is potential in every learner and it is part of a teacher's job to nurture and help the children develop their own intelligences.

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