



Developing Multiple Intelligences in Young Learners

By Connie Hine

Current research on the brain, learning and human intelligence from a variety of disciplines, including medicine, cognitive sciences, and education has provided information with profound implications to education. This research is challenging and stretches the traditional approaches to education and teaching, particularly with regard to the ability to learn, human intelligence, and how efficient learning occurs.

Intelligence—What Is It?

The traditional theory of intelligence has two fundamental assumptions:

1. that human cognition is unitary; and
2. that individuals can be adequately described as having a single, quantifiable intelligence.

The traditional theory of intelligence has helped create a mindset or paradigm as to what "smart" or "intelligent" is, who has potential or ability to be smart, and how we can or cannot become smart. This has clearly influenced current educational practices. It is still common educational practice to use the score from standardized intelligence tests to qualify children for various special programs. It is assumed these tests measure intelligence accurately and meaningfully.

Current research indicates that the only limit to one's intelligence is what the individual believes is possible and how his or her behaviors either foster or limit his or her intelligence. Research also indicates that intelligence is not a static structure that can be measured and meaningfully quantified, but an open, dynamic system that can continue to develop throughout life. Through his work and studies, Reuven Feuerstein, an Israeli psychologist and educator, has developed a theory of the "Modifiability of Intelligence." He has linked the importance of how teachers, through facilitating learning experiences, impact the quality of learning and influence the potential intelligence of each student. Feuerstein's educational approach focuses on the quality of interaction between the teacher and the learner, which he calls Mediated Learning Experiences (MLE). He has successfully demonstrated how, through systematic and planned enrichment, intelligence can be modified, expanded, and developed. (Feuerstein, 1988).

Marian Diamond, a neuropsychologist at the University of California-Berkeley, has discovered that the human brain can change and improve with use. Diamond's theory of the "Plasticity of the Brain" implies that environmental conditions, interpersonal stimulation, and the way in which individuals think and behave actually change the body, brain, and intelligence. (Diamond, 1988).

The Theory of Multiple Intelligences

Supporting the new paradigm of intelligence, Howard Gardner of Project Zero at Harvard University has determined that intelligence is a pluralistic phenomenon, rather than a static structure with a single type of intelligence. Gardner defines intelligence as:

- the ability to solve problems that one encounters in real life;
- the ability to generate new problems to solve;
- the ability to make something or offer a service that is valued within one's culture. In his cross-cultural exploration of the ways in which people are intelligent, he has identified seven distinct types of intelligences:
 - Verbal/Linguistic
 - Logical/Mathematical
 - Musical
 - Visual/Spatial
 - Body/Kinesthetic
 - Interpersonal
 - Intrapersonal

According to Gardner's theory, one form of intelligence is not better than another; they are equally valuable and viable (Gardner, 1983). Yet, he discovered that different cultures are biased towards and against certain types of intelligences. Our western, North American culture, for instance, favors verbal/linguistic and logical/mathematical intelligences and tends to undervalue others, such as body/kinesthetic intelligence. These biases, added to the traditional theory of intelligence, have limited our development of curricula, instructional strategies, and current methods of assessment—including how we measure intelligence.

Recent brain/mind research and new theories of human intelligence redirect our attention in three specific areas—first, on the environmental conditions and messages we provide children; second, on the kind of support and relationships we develop between caregivers, educators, and children; and third, on the need to match what we know about the ways kids are intelligent and learn with teaching strategies designed to maximize the full development of each individual child.

A Useful Model

Gardner's Multiple Intelligences theory is a very useful model for developing a systematic approach to nurturing and teaching children and honoring their individual needs and strengths within a classroom setting. The theory of Multiple Intelligences includes the notion that each person is smart in all seven types of intelligence. Every person is smart to varying degrees of expertise in each of the intelligences, stronger in some ways and less developed in others. Heredity and genetics influence the way the brain is neurologically "wired" before birth and are contributing factors that determine the strongest and/or most favored types of intelligence. This is often seen in children with very strong and overt talents demonstrated at very young ages, such as Mozart, who had started to play and compose music by age five.

Because research now shows that we can become more intelligent in more ways, both students and teachers can become more adept in all seven intelligences. This is possible by providing a planned cycle of experiences and opportunities which foster each and every intelligence, and by making these opportunities available to every child in our classrooms. By broadening our view of intelligence, and valuing and nurturing abilities other than mathematics and reading, we can open doors by using the strengths of children as a means of complementing their less developed areas.

Characteristics of Multiple Intelligences

The following descriptions can be helpful to identify basic personal characteristics, traits, behaviors, and preferences for each of the seven intelligences. Remember, we are all intelligent to varying degrees in all seven ways. Each person has a unique profile. You may be very strong in one or two intelligences, medium in a few, and perhaps weak or empty (not yet filled) in one or two. Consequently, you may have four or five intelligences that are equally developed and two that are less developed. The important thing is to identify and build on one's strengths to modify and increase the less developed intelligences in ourselves and in children.

1) Verbal/Linguistic Intelligence—"The Writer/Orator/Attorney"

People with high verbal/linguistic intelligence love words. They prefer to process information through words and language versus pictures. They may prefer oral or written methods, or excel in both. Additional characteristics include the following:

- Sensitive to the meaning, order, and sound of words
- Uses varied language
- Avid talkers; good speakers
- Likes to explain, convince, and persuade through words
- Enjoys and excels at word games
- Enjoys listening to, telling, and reading stories
- Enjoys rhymes and poetry
- Has good memory recall for names and dates

2) Logical/Mathematical Intelligence—"The Scientist/Philosopher"

People with high logical/mathematical intelligence create order out of chaos by analyzing, grouping, and categorizing. They recognize relationships, connections, and patterns more easily than people with less logical intelligence. Additional characteristics include the following:

- Ability to handle long chains of reasoning
- Likes reasons for doing things
- Possesses good inductive and deductive reasoning
- Quick to learn equivalencies
- Asks "why" and "how" questions
- Solves problems rapidly
- Likes to predict, analyze, and theorize
- Enjoys dealing with abstraction
- Strong at math and problem solving skills
- Sequential thinker
- Enjoys board games and games with rules

3) Musical Intelligence—"The Entertainer/Musician"

People with high musical intelligence learn best through sound, rhythm, and music. These people learn better when music is playing and through musical metaphors. Additional characteristics include the following:

- Ability to perceive pitch, tone, and rhythmic pattern

- Well developed auditory sense and discrimination
- Ability to create, organize rhythmically, and compose music
- Picks up and creates melodies/rhythm easily
- Remembers songs easily
- Ability to sing or play instruments
- Sensitive and drawn to sounds
- Possesses "schemas" for hearing music
- Constantly humming, tapping, and singing

4) Visual/Spatial Intelligence—"The Architect/Engineer/ Sculptor"

People with high visual intelligence process information best using pictures, visuals, and imagery. They have a sense of direction and an ability to think and plan in three dimensions. Additional characteristics include the following:

- Ability to create complex mental images
- Active imagination
- Ability to find their way mentally and physically around environment
- Ability to see the physical world accurately and translate it into new forms
- Ability to see things in relationship to others
- Ability to use "mind maps"
- Uses imagery and guided visualizations
- Likes visual support-video, pictures, photos, charts, posters
- Organizes space, objects, and areas
- Enjoys designing and decorating

5) Body/Kinesthetic Intelligence—"The Athlete/ Dancer/Actor/Surgeon"

People with high kinesthetic intelligence process information through their bodies-through muscle, sensation, and movement. Their bodies are their avenue to learning and understanding any content or subject and is also their preferred form of self-expression. Additional characteristics include the following:

- A fine-tuned ability to use the body and handle objects (fine and gross motor)
- Ability to express emotions through bodily movement
- Enjoys physical movement and dance
- Constant movement-likes to get up and move around
- Commitment to comfort
- Uses body to accomplish a task
- Experiences a strong mind/body connection
- Expands awareness through the body
- Experiences a total physical response
- Often good at creative drama

6) Interpersonal Intelligence—"The Counselor/Minister/Teacher"

People with high interpersonal intelligence process information through relatedness to others. They are "people" people. It is in relationship to and with other people that they best understand themselves and the world. Additional characteristics include the following:

- Ability to notice and discern subtleties among others, such as moods, temperaments, and feelings
- Discerns underlying intentions, behavior, and perspectives
- Easily makes friends and enjoys the company of others
- Ability to get into the perspective of another
- Responds to verbal and nonverbal communications-facial cues and body movements
- Recognizes and empathizes with others' feelings
- Ability to negotiate and handle conflict resolution
- Works cooperatively in a group
- Works well with a diverse group of people
- Good communication skills
- Loves to talk and influence

7) Intrapersonal Intelligence—"The Poet/Efficiency Expert"

People with high intrapersonal intelligence have a strong sense of themselves, their wants, and needs. They are self reflective and in touch with themselves. They may be the nonconformist individuals who march to their own drummer. Additional characteristics include the following:

- Well developed sense of self
- Awareness and expression of different feelings
- Self reflection and mindfulness
- Ability to think about thinking (i.e., metacognition)

- Transpersonal sense of self. Asks big questions—"Why are we here?" and "What happens when we die?"
- Often is a daydreamer
- Often writes introspectively including prose, poetry, or journal writing
- Excellent self planners and good at goal setting
- Enjoys solitude and likes to think alone
- Good understanding of strengths and weaknesses
- Enjoys self discovery

Teaching Tools and Strategies

Reflect on and identify your own strengths and intelligences which are less developed. Identify the strengths and "empties" of the children, too. You may begin to notice patterns and correlations between the strengths you enjoy or are less comfortable with in the children and your own strengths and empties. Are the children's strengths the same as yours or are they most intelligent in a way you are least intelligent? We naturally rely on and use teaching strategies that match our strongest intelligences. Our strengths, therefore, create unconscious teaching biases. When we identify our own less developed intelligences, we may notice that we are untrained in or have avoided using the teaching strategies best designed for developing that intelligence in children. Therefore, it becomes our responsibility first to identify our own strengths and weaknesses and then to stretch and continue our lifelong learning process by developing our own intelligences. Only then can we incorporate teaching strategies which support all seven intelligences and meet the needs of all children.

Environmental Strategies to Support Multiple Intelligences

Because circle time and whole group instruction activities dictate that we do the same thing with all or most of the children at the same time, these activities are among the least effective strategies for meeting the diverse needs and intelligences of young children. Group activities often favor a teacher's strengths while meeting the strengths of only a few of the children. The most significant modification we can make to meet diverse needs is to reduce the use of circle time and replace it by incorporating and using well-planned learning stations or centers where children can spend most of their day. Learning stations are temporary activity locations where materials are put out and later put away, usually by an adult. Learning centers are permanent locations, visually and spatially defined areas, ideally three-sided, where materials are organized by subject and available for children to select independently.

Active Learning Centers for Multiple Intelligences

The following suggested learning centers foster the development of each intelligence and allow children opportunities to build on and expand their strengths.

Verbal/Linguistic

Library or book-nook
Story time
Writing center
Listening center
Flannel board station
Publishing center

Logical/Mathematical

Math center
Science center
Take-apart center
Puzzle center
Recycling center
Weather station
Computer center (e.g., logical thinking, sequential software)
Cooking center

Musical

Music center
Instrument center
Singing circle
Listening center
Background music
Nature sounds

Visual/Spatial

Art center (e.g., sculpting dough, collage, painting, drawing)
Manipulatives (e.g., 3-D manipulatives, visual puzzles)
Block center, Media center (e.g., videos, slides, photos, charts)

Computer center (e.g., visual design and layout software)

Kinesthetic

Gross motor center (e.g., open space for creative movement, climbing structure, mini-trampoline)

Dance circle

Woodworking center

Manipulative center

Take-apart center

Imaginative-play center

Playground/outdoor play

Tactile-learning center (e.g., sandpaper letters, sample textures and cloth)

Interpersonal

Puppet theater

Dramatic play center

Sharing/social area

Group discussion area

Small group area

Cooking center

Intrapersonal

Lofts

One-person centers & stations

Life skills/self-help center

Computer center (e.g., self-paced software)

Conclusion

Howard Gardner's Theory of Multiple Intelligences honors and promotes the development of all seven avenues of intelligence in young children. This approach provides a framework to identify how children learn; to build on their strongest assets; to help them become more intelligent by exposing them to a variety of ways of learning; to better individualize for their interests and needs; and to use teaching strategies that make learning more efficient, successful, and enjoyable for all children. We can foster meaningful learning experiences by using multiple teaching tools and strategies and by building positive, supportive relationships with children. Through environments that offer a variety of stimulating, hands-on materials that children individually select, and by creating learning centers that provide natural opportunities to move, be active, and fully engaged in either solo or small group experiences, we better serve and meet the needs of more children.

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References

Armstrong, T. (1993). *Seven kinds of smart*. Los Angeles: Jeremy Tarcher, Inc.

Campbell, B. (1994). *The multiple intelligence handbook*. Stanwood WA: Campbell & Associates, Inc.

Campbell, L., Campbell, B.; Dickenson, D. (1992). *Teaching and learning through multiple intelligences*. Seattle: New Horizons in Learning.

Diamond, M. (1988). *Enriching heredity: The impact of the environment on the anatomy of the brain*. New York: The Free Press.

Feuerstein, Reuven, Rand & Rynders (1988). *Don't accept me as I am: Helping "retarded" people to excel*. New York: Plenum Press.

Feuerstein, R. (1980). *Instrumental enrichment*. Baltimore, MD: University Park Press.

Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.

Lazear, D. (1994). *Multiple intelligence approach to assessment: Solving the assessment conundrum*. Tucson, AZ: Zephyr Press.

Lazear, D. (1994). *Seven pathways of learning*. Tucson, AZ: Zephyr Press.

Sternberg, R. (1988). *The triarchic mind*. New York: Viking.

Teaching Tools and Strategies

The following are activities and strategies that can help us strengthen and support the development of each of our intelligences. When we begin systematically to implement these multiple strategies to teach any subject, concept, or activity, we will naturally meet the individual needs of more children. As Colin Rose states, "The

more ways you teach, the more people you reach."

Verbal/Linguistic Activities

Reading, Improving vocabulary, Emergent /creative writing, Writing and reading reports/essays, Taking and giving dictation, Giving and listening to verbal instructions (oral and/or written), Lecturing o Impromptu speaking, Story telling, Dialogue and discussion, Debate, Publishing, Telling jokes, Listening to tapes, Doing crossword puzzles, Keeping a diary or journal

Logical/Mathematical Activities

Sorting and classifying objects or ideas, Taking apart or fixing things, Solving math problems, Solving mysteries, riddles, puzzles, and word problems, Exploring, Outlining, Grouping and calculating activities, Creating timelines and sequences, Comparing and contrasting, Experiences that demonstrate change over time (e.g., before/after), Using symbols and formulas, Playing pattern games, Socratic questioning-especially open-ended and "what if" questions

Musical Activities

Listening to background, instrumental, or environmental music, Unison recall activities, Giving or listening to musical performances, Singing, Clapping and slapping memory games, Rhythm, chants, and rap, Setting new ideas to familiar tunes, Using musical instruments, Composing music

Body/Kinesthetic Activities

Role playing/drama, Playing sports, Playing physical games such as Pictionary™ or Charades, Dancing, Miming, Using physical gestures, Physical exercise, "Hands-on" activities, Changing seats and moving to different learning stations/centers, Creating new room rearrangements, Standing or moving while listening, Learning a topic or idea with a physical gesture associated, Taking things apart and tinkering, Finger writing on palms or back

Visual/Spatial Activities

Using guided imagery, Playing with patterns and designs, Mind-mapping, Taking pictures/photos, Drawing/painting/sculpting, Watching and making videos, Creating charts and graphs, Using color cues and organizers, Circle/line dancing, Changing teaching locations, Rearranging the room to suit the subject or project, Giving or taking visual/spatial instructions

Interpersonal Activities

Cooperative learning, Working with a partner, Group projects and games, Creative drama/role playing, Simulation, Practicing empathy, Win/win competition, Peer teaching and buddy systems, Subject drills with partners, Quizzing each other, Discussion, Getting and giving feedback

Intrapersonal Activities

Guided imagery, Thinking about how to solve a task/problem, Meditation, Journal writing, Self assessment, Personal contracts and goal-setting, Silent reflection and review time for recall or thinking about what has been learned, Emotional processing, Focusing/concentrating, Higher-order reasoning tasks, Time to be alone, Providing choices



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