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NATURALIST

Core Characteristics:

- Natural Orientation – identification with living organisms and their environments
- Attribute Orientation – finding common traits among items
- Categorisation – identifying categories by attribute
- Hierarchical Reasoning – ranking items by significance and relationship
- Schematic Memory – internalizing and recalling information by attribute, category or hierarchy

Students with a strong naturalist intelligence:

- Are intrinsically organised
- Demonstrate an empathy with nature
- Pick up on subtle differences in meaning
- Like to make collections of materials
- Enjoy sorting and organising materials
- Impose their own sense of order on new information
- Respond to semantic mapping activities
- Prefer charts, tables, diagrams and timelines

Use the following strategies to support learning:

- Using graphic organizers
- Providing sorting and attribute grouping tasks
- Brainstorming categories
- Charting hierarchies
- Utilizing semantic mapping of ideas
- Building portfolios of student work
- Making connections to the natural world
- Modelling strategies for finding common attributes, categories and hierarchies across the curriculum.

Technologies that stimulate this intelligence:

- Magnifying glass
- Microscope
- Telescope
- Bug box
- Scrap book
- Sandwich bag
- Plastic container
- Database
- Laserdisc
- Floppy drive
- File manager
- Semantic mapping tools

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MUSICAL/RHYTHMIC

Core Characteristics:

- Aural Orientation – heightened listening ability
- Patterning – seeking all kinds of patterns, not just in sound
- Resonance - identification with patterns as an expression of experience
- Audiation – thinking musically rather than verbally

Students with a strong rhythmic intelligence:

- Seek patterns in new information
- Find patterns in their environment
- Are particularly drawn to sound
- Respond to cadence in language
- Enjoy moving to rhythms
- Pick up terms and phrases in foreign languages easily
- Use patterning to both internalize and recall skills, ideas and concepts

Use the following strategies to support learning:

- Working with pattern blocks
- Hearing sounds in one's environment
- Moving to rhythm
- Drawing visual patterns
- Learning a foreign language
- Identifying rhyme schemes
- Finding patterns in sequences of numbers
- Listening to a symphony
- Deciphering code
- Learning to read music

Technologies that stimulate this intelligence:

- Pattern blocks
- Puzzles
- Musical instruments
- Phonograph
- Headphones
- Tape player/recorder
- Digital sounds
- Online pattern games
- Multimedia presentations
- Speakers
- CD ROM disks
- CD ROM player

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Core Characteristics:

- Linear Reasoning – seeking order and consistency in the world
- Concrete Reasoning - breaking down systems into their components
- Abstract Reasoning - using symbols that represent concrete ideas
- Causal Relationships – identifying cause and effect within a system
- Complex Operations – performing sophisticated algorithms

Students with a strong logical intelligence:

- Seek order
- Reason scientifically
- Identify relationships
- Enjoy testing theories
- Like completing puzzles
- Excel at calculating numbers
- Solving problems instinctively
- Analyse abstract ideas
- Manipulate functions
- Perform these operations at a rapid rate

Use the following strategies to support learning:

- Creating intrinsic and extrinsic order in your classroom
- Presenting criteria at the beginning of an activity to provide structure
- Offering open-ended problem solving tasks
- Including convergent thinking activities in instruction
- Promoting experiments which test student hypotheses
- Using syllogisms in language
- Encouraging classroom debate
- Incorporating puzzles into learning centres
- Setting short term, achievable goals for the class
- Allowing students to participate in building assessment rubrics

Technologies that stimulate this intelligence:

- Lecture
- Cuisenaire rods
- Unifix cubes
- Tangrams
- Measuring cups
- Measuring scales
- Ruler/yardstick
- Slide rule
- Graphing calculators
- Spreadsheet
- Search engine
- Directory
- FTP clients
- Gophers
- WebQuests
- Problem solving tasks
- Programming languages

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EXISTENTIAL

Core Characteristics:

- Collective Consciousness – the capability to see how something relates to the big picture
- Collective Values – the understanding of classical western values of truth, goodness and beauty
- Summative Iteration – the ability to summarize details into a larger understanding
- Intuitive Iteration – a responsiveness to the intangible qualities of being human, be it responding to the arts, philosophical virtues or religious tenets

Students with a strong existential intelligence:

- Seek meaningful learning
- Look for connections across the curriculum
- Like to synthesize ideas based on their learning
- Enjoy literature and customs from other cultures
- Have a strong connection with family and friends
- Develop a strong identity with their neighbourhood and town
- Express a sense of belonging to a global community
- Like to get involved with social and political causes
- Can have a strong commitment to their health and well-being
- Tend to look at information relative to the context in which it is presented

Use the following strategies to support learning:

- Offering an overview before starting new instruction
- Considering topics from multiple points of view
- Relating material to global themes and concepts
- Integrating your instruction across the curriculum
- Including the arts in instruction where appropriate
- Discussing how topics are important to the classroom, school, community or world
- Bringing in resource people who offer additional perspective on a topic
- Helping students learn to cohesively summarize what they have learned
- Allowing students to demonstrate learning by applying understanding in new and different contexts
- Having students participate in rubric development for performance-based tasks so that they take ownership for their learning

Technologies that stimulate this intelligence:

- Art replica
- Planetarium
- Stage drama
- Classic literature
- Classic philosophy
- Symbols of world religions
- Virtual communities
- Virtual art exhibits
- Virtual field trips
- MUDs
- Blogs
- Wikis
- Virtual reality
- Simulations

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INTRAPERSONAL

Core Characteristics:

- Affective Awareness – the knowledge of one's feelings, attitudes and outlook
- Ethical Awareness – the setting of one's principles and moral priorities
- Self-Regulation – monitoring one's thoughts, actions and behavior
- Metacognition – the awareness of one's thought processes

Students with a strong intrapersonal intelligence:

- Are comfortable with themselves
- Express strong like or dislike of particular activities
- Communicate their feelings
- Sense their own strengths and weaknesses
- Show confidence in their abilities
- Set realistic goals
- Make appropriate choices
- Follow their instincts
- Express a sense of justice and fairness
- Relate to others based on their sense of self

Use the following strategies to support learning:

- Differentiating instruction
- Using analogies in making comparisons
- Providing activities which offer learner choices
- Having students set goals for themselves in the classroom
- Including daily journal writing in your classroom routine
- Providing opportunities for learners to express their feelings on a topic
- Allowing opportunities for student reflection on learning
- Examining current events in terms of social justice
- Including student self-assessment in classroom assessment strategies
- Utilizing interest inventories, questionnaires, interviews and other approaches to measuring student growth

Technologies that stimulate this intelligence:

- Journals
- Diaries
- Surveys
- Voting machines
- Learning centers
- Children's literature
- Class discussion
- Real time projects
- Online surveys
- Online forms
- Digital portfolios
- Self-assessments

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BODILY/KINESTHETIC

Core Characteristics:

- Sensory – internalizes information through bodily sensation
- Reflexive – responds quickly and intuitively to physical stimulus
- Tactile – demonstrates well-developed gross and/or fine motor skills
- Concrete – expresses feelings and ideas through body movement
- Coordinated – shows dexterity, agility, flexibility, balance and poise
- Task Orientated – strive to learn by doing

Students with a strong kinaesthetic intelligence:

- Seek to interact with their environment
- Enjoy hands-on activities
- Can remain focused on a hands-on task for an extended period of time
- May demonstrate strong fine and/or gross motor ability
- Prefer learning centres to seat work
- Seek out other students who are physically gregarious
- Master a principle once they can manipulate materials that demonstrate the concept
- Enjoy group games and active learning tasks
- Are different from children who are hyperactive

Use the following strategies to support learning:

- Providing hands-on learning centres
- Incorporating creative drama into your instruction
- Including interactive games in reviewing and remediating content
- Offering experiences in movement to rhythm and music
- Engaging students in hands-on science experiments
- Utilising manipulatives in math instruction
- Allowing opportunities for building and taking apart
- Encouraging students to construct physical representations of concepts
- Keeping students physically moving throughout the school day

Technologies that stimulate this intelligence:

- Construction tools
- Kitchen utensils
- Screw
- Lever
- Wheel and axle
- Inclined plane
- Pulley
- Wedge
- Physical education equipment
- Manipulative materials
- Mouse
- Joystick
- Simulations that require eye-hand coordination
- Assistive technologies
- Digital probes

VERBAL/LINGUISTIC

Core Characteristics:

- Ideation – think and remember through internal language
- Functional Literacy - understand the rules and functions of language
- Self-Regulation - analyse one's own use of language
- Adaptation – apply rules of language to new and different contexts
- Oral Expression –explain and express one's self verbally
- Written Expression - explain and express one's self in writing

Students with a strong linguistic intelligence:

- Appreciate the subtleties of grammar and meaning
- Spell easily
- Enjoy word games
- Understand jokes, puns, and riddles
- Use descriptive language
- Are good storytellers
- Internalize new information through lecture and discussion
- Demonstrate understanding easily through discussion and essay

Use the following strategies to support learning:

- Exploring new vocabulary
- Learning terms and expressions from other languages
- Encouraging opportunities for public speaking
- Incorporating drama into learning
- Keeping daily journals
- Promoting opportunities for creative writing
- Nurturing oral storytelling
- Including opportunities for expository and narrative writing
- Utilizing quality children's and young adult literature in the classroom

Technologies that stimulate this intelligence:

- Textbook
- Pen/pencil
- Worksheet
- Newspaper
- Magazine
- Word processing
- Electronic mail
- Desk top publishing
- Web-based publishing
- Keyboard
- Speech recognition devices
- Text bridges

INTERPERSONAL

Core Characteristics:

- Collaborative Skills – the capability to jointly complete tasks with others
- Cooperative Attitude – the willingness to offer and accept input
- Leadership – recognition by peers as someone to follow
- Social Influence – an ability to persuade others
- Social Empathy – an awareness and concern for others
- Social Connection – a skill for meaningfully relating to others

Students with a strong interpersonal intelligence:

- Seek the support of a group
- Value relationships
- Enjoy collaborative work
- Solicit input from others
- Enjoy sharing about themselves
- Display a "winning" personality
- Tend to be natural leaders

Use the following strategies to support learning:

- Allowing interaction among students during learning tasks
- Including activities where students work in groups
- Providing opportunities for students to select their own groups
- Forming cooperative groups wherein each member has an assigned role
- Planning activities where students form teams to be successful
- Allowing competition that promotes higher level achievement
- Incorporating structured dramatic activities in which students can role play
- Utilizing resource people to invigorate your classroom
- Promoting interaction with other classes by participating in learning tasks together

Technologies that stimulate this intelligence:

- Class discussion
- Post-it notes
- Greeting card
- Laboratory
- Telephone
- Walkie-talkie
- Intercom
- Board games
- Costumes
- Collaborative projects
- Chat
- Message boards
- Instant messenger

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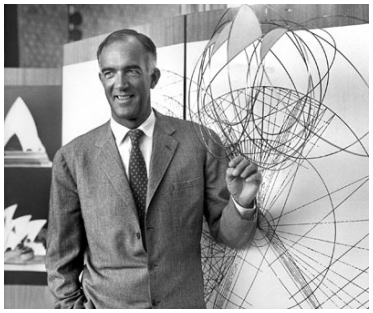


VISUAL/SPATIAL

Core Characteristics:

- Spatial Awareness - solving problems using spatial orientation
- Non-sequential Reasoning - thinking in divergent ways
- Visual Acuity - assessment of information based on principals of design and aesthetics
- Imagination - seeing the possibilities before engaging them in the physical world
- Small motor coordination - creating, building, arranging, decorating

Students with a strong visual intelligence:

- Seek ocular stimulation
- Respond to colour, line and shape
- Can "see" ideas
- Use mental images for mnemonic devices
- Imagine possibilities
- Enjoy expressing themselves through the arts
- Appreciate symmetry and congruence
- Enjoy rearranging their environment
- Can manipulate three-dimensional models in their minds
- Understand by seeing a concept in action

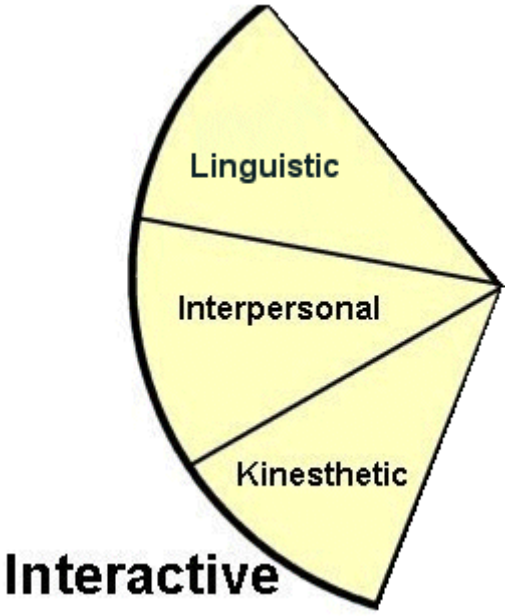
Use the following strategies to support learning:

- Allowing student movement around the learning environment
- Providing a visually stimulating environment
- Sketching plans before beginning work
- Brainstorming ideas
- Semantic mapping
- Guided imagery exercises
- Working with manipulatives
- Diagramming abstract concepts
- Providing visual assessment performance tasks
- Utilizing visual technologies such as KidPix and PowerPoint

Technologies that stimulate this intelligence:

- Overhead projector
- Television
- Video
- Picture books
- Art supplies
- Chalkboard
- Dry erase board
- Slide shows
- Charting and graphing
- Monitor
- Digital camera/camcorder
- Scanner
- Graphics editor
- HTML editor
- Digital animation
- Digital movies

THE INTERACTIVE DOMAIN



The interactive domain consists of the linguistic, interpersonal, and kinaesthetic intelligences. These are the intelligences that learners typically employ to express themselves and explore their environment.

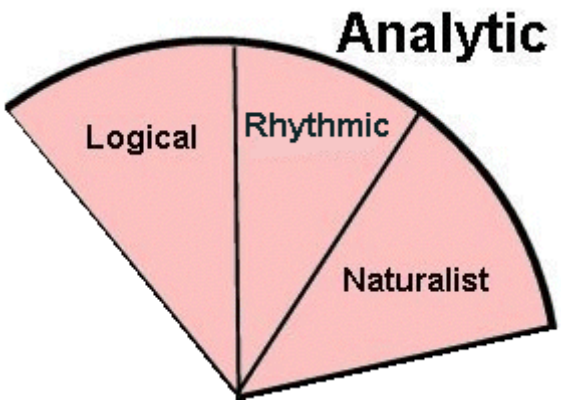
Consider five year old Selange in his Kindergarten classroom. He not only uses language to demonstrate his knowledge or express his needs, he also uses language to explore, inquire and prompt responses from others. This can include the use of nonsensical expressions, repetitive recounting of favourite books, and even reverting to "baby talk". Regardless of the many functions of language Selange is using, he consistently makes use of talk to interact with others and his environment.

Eleven year old Selina is a prime example of the interactive function of the interpersonal intelligence. As her class reads E.G. Speare's The Witch of Blackbird Pond she continually prompts her teacher to ask about the mores of seventeenth century New England. Selina initiates class discussion on the social dynamics of prosecuting witches in Colonial New England, not for the sake of the discussion itself but to help her better understand the plot and setting of the story. When it comes time to be assessed for comprehension of the novel, Selina excels in an interview format, in which she can discuss her understandings and ideas at length. In fact, her teacher is offering several assessment options, including the opportunity to be interviewed by a classmate as the heroine from the book.

Finally, consider Susan's use of her kinaesthetic intelligence as an interactive process. Susan has been learning about electrical circuits in her third grade class. This week the teacher has set up an experiment as a learning centre where Lin and her classmates must use batteries, copper wiring and light bulbs to create electrical circuits. Susan and her group of three classmates quickly create a complete circuit. They then ask their teacher Mrs. Morales for some paper clips so that they can experiment making a switch that will open and close the circuit. Finally Susan and her group take the experiment a step further by creating a parallel circuit using two light bulbs. Susan has repeatedly interacted with her environment and her peers to create a greater understanding of how electrical circuits work.

I characterize these three intelligences as interactive because even though they can be stimulated through passive activity they typically invite and encourage interaction to achieve understanding. Even if a student completes a task individually, s/he must consider others through the way s/he writes, creates, constructs and makes conclusions. The interactive intelligences are by their nature social processes.

THE ANALYTIC DOMAIN



The analytic domain consists of the logical, rhythmic and naturalist intelligences. These are the intelligences that promote analysis of knowledge that is presented to the learner.

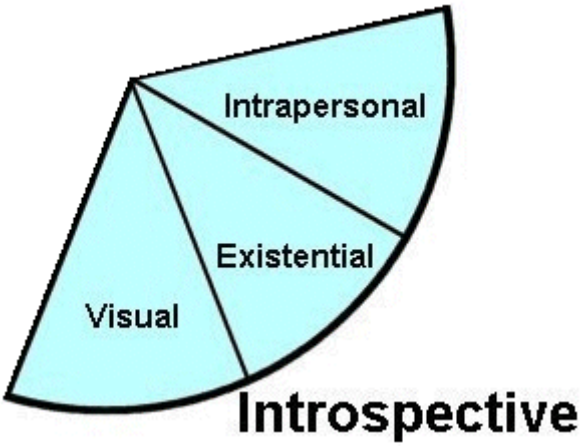
Consider Ms. Gamboro's class. They have created instruments that simulate the sounds of the rain forest, and each child is now creating his or her own composition that makes use of these sounds. As a child comes before the class to present and conduct his or her composition, students must follow the patterns of sound and imitate them accurately in order to successfully perform the piece. There is a careful auditory analysis of each rhythm presented to the class, and in cases where the student has created sheet music with symbols for the different instruments as they play, there is visual analysis of patterns evident as well.

Then consider that the logical intelligence has a highly analytical component. Li and Marla are working to create a bridge out of popsicle sticks that will be able to hold the weight of a motorized twelve-pound truck as it crosses their structure. They have studied many kinds of bridges and they are employing what they have learned to make a structure strong enough to successfully do the job. As they attempt different designs, they are careful to analyse their failures and build on their successes. After two weeks of working a little every day, Marla and Li come up with a design that is effective in safely holding the truck's weight. Problem solving is a very analytical process!

Finally, consider Shanae, who is sorting leaves by different attributes at a first grade learning centre. She sorts them by colour, then by size, then by texture. As she comes up with a classification system for the leaves that makes sense to her, she glues each leaf down on a large sheet of paper that serves as an organizer. She then presents her leaf classification system to be displayed in the classroom so that children can compare and contrast one another's strategies for classification.

I characterize these three intelligences as analytic because even though they can have a social or introspective component to them, they most fundamentally promote the process of analysing and incorporating data into existing schema. The analytical intelligences are by their nature heuristic processes.

THE INTROSPECTIVE DOMAIN



The introspective domain consists of the existential, intrapersonal and visual intelligences. These are the intelligences that have a distinctly affective component to them.

In the case of the visual intelligence, consider Michelangelo celebrating the discovery of a large slab of marble because he wants to free the angel encased therein through his act of sculpting. There is a uniquely emotional component to envisioning a piece of art before the artist actually creates it. In the same way, recall a student you have worked with who served as a class leader simply because s/he was able to visualize where s/he wanted to go with a project before the rest of the group even got its collective self together to begin discussing the possibilities. There is an intuitive release of energy that sparks the enthusiasm and imagination of others when the visual intelligence is unleashed.

The existential intelligence displays similar emotional, introspective characteristics. When Soeren Kierkegaard described looking at the infinite depth of the night sky and having an emotionally charged response that "Yes, I am part of something bigger in the universe!" he was referring to this experience. It is necessary to make that leap of faith in order to contribute to the collective human experience. By the same token, place yourself in the presence of the Pieta and feel the emotional response as your senses take in the aesthetic beauty of one of mankind's great expressions of human love and suffering. It moves many unsuspecting onlookers to tears. It is another example of that emotional response to cognitive stimulus.

The intrapersonal intelligence may be the most obvious example of this. Consider fourteen year old Kathleen who filters everything she is learning through her strong sense of social justice. She lights up when learning about the plight of Native Americans in the nineteenth century, the ethical dilemmas presented by genetic engineering, and reading Alan Paton's Cry, the Beloved Country. In fact, with an upcoming presidential election in the Fall, Kathleen is very interested in helping out at her local party headquarters and campaigning for the candidates of her choice. Everything Kathleen is learning is reinforced and mastered by the emotional connection she has with the different kinds of content she is studying.

I characterize these three intelligences as introspective because they require a looking inward by the learner, an emotive connection to their own experiences and beliefs in order to make sense of new learning. The introspective intelligences are by their nature affective processes.

Multi Intelligence Immersion Exercises
http://surfaquarium.com/MI/intelligences.htm