So Each May Learn
Integrating Learning Styles and Multiple Intelligences
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This is <u>only</u> a selection of the content in order to give you a short view of the book, its main ideas and some other details that you may find helpful. It neither summarizes nor substitutes the content.

It is always advisable to read any book of choice from the beginning to the end for comprehension, benefit, and unbiased review.

This book is essential to every educator as it highlights challenges faced in schools due to student diversity and presents two powerful learning models – multiple intelligences and learning styles.

It presents a holistic approach of handling different types of learners with various academic levels of achievements.

What is integrated learning?

It is an approach to curriculum, instruction, and assessment designed to help teachers and schools fuse multiple intelligences and learning styles in a meaningful way. It is driven by the following goals:

- *Effectiveness*: in that it maximizes the liabilities of both multiple intelligences and learning styles.
- *Practicality*: in that it respects the demands of teachers who are being asked to meet national and local standards as well as run efficient and engaging classrooms.
- *Fairness*: in that it fosters the fullest possible range of academic diversity.

Integrated means:

1. <u>Blended into a whole</u>: Howard Gardner (multiple intelligences) and Carl Jung (learning styles) are two great minds of the twentieth century, who provide us with two learning models. However, each model has strengths and weaknesses so only blending these two models results in holistic approach to education. (one that allows educators to engage in a full range of human diversity and meet rigorous academic standards.
2. <u>Incorporated as part of a large picture</u>: Any learning theory or model is only as good as its applicability. Since schools expect teachers to abide by curriculum frameworks, this integrated approach can be incorporated into current practices.

3. <u>Driven by the goal of equality</u>: It strives to create environment where all learners feel that their ideas, contributions, and work are valued, and that they can succeed.

An Introduction to Multiple Intelligences

During the twentieth century a shift has occurred in the way intelligence was viewed. Researchers, such as Reuven Feuerstein, Paul MacLean, and Roger Sperry, have revealed insights into cognition. Swiss psychologist Jean Piaget's theories on how Humans construct knowledge have become important foundations and starters for later discoveries, such as ID testing.

<u>Defining Intelligence</u>: Gardner expanded the parameters of intelligent behavior to include a diversity of human abilities. His method explores the way in which cultures value individuals and the way individuals create different products or serve their cultures in various capacities.

In "Frames of Mind", Gardner introduced what is different than IQ theory by adding "s" to "intelligence" to name it as "intelligences". He defines intelligence as:

1. The ability to solve problems that one encounters in real life.
2. The ability to generate new problems to solve.
3. The ability to make something or offer a service that is valued within one's culture.

Gardner divided the notion of intelligence into eight categories:

1. **Verbal-Linguistic Intelligence (V):** the ability to manipulate words for a variety of purposes: debate, persuasion, storytelling, poetry, prose writing, and instruction.
2. **Logical-Mathematical Intelligence (L):** the ability to find patterns, establish cause and effect relationships, conducting controlled experiments.
3. **Spatial Intelligence (S):** capacity for perceiving, creating, and re-creating pictures and images.
4. **Musical Intelligence (M):** the ability to produce rhythm, sing in key, keep tempo, analyze musical forms.
5. **Bodily-Kinesthetic Intelligence (B):** ability to handle objects or make precise bodily movements with relative ease.
6. **Interpersonal Intelligence (P):** ability to work well with others. It is about being friendly and outgoing.
7. **Intrapersonal Intelligence (I):** ability to gain access to one's feelings and emotions. It is about choosing to work on one's own, trusting self-understanding to guide oneself.
8. **Naturalist Intelligence (N):**   tendency to love nature, walking outdoors, and observing patterns and features.

These intelligences are not fixed categories. All people possess all these intelligences, use all of them and develop each intelligence.

Intelligences as Dispositions

Critical thinking dispositions are based on the work of Perkins, Jay and Tishman (1993), who claim that good thinkers have certain dispositions that influence their ability to process and make sense of information.

A disposition is a sensitivity for a particular type of intelligence. A sensitivity may lead to an inclination for using that intelligence and in the right environment and under the right circumstances, an inclination can be translated into an ability to use the intelligence in a variety of contexts.

Intelligences Combinations

Every person is born with eight intelligences and all these are modifiable and teachable. Your results from the MI Indicator reveal your unique combination of intelligence strengths and weaknesses.

Every task we aspire to do calls forth a multiple of our intelligences. Using these intelligences helps us while solving problems.

Intelligences in the Classroom

Good teaching strives to use multiple methods of implementing this theory of Gardner in education.

The inclusion of sports programs, music programs, community service clubs, debate teams, chess clubs, and art programs into school curricula speak to intelligence targeting. Armstrong 1994 states that teachers often target specific intelligences through activity centers. These activity centers may be "open-ended", giving students freedom to choose their own endeavors.

Differentiating Instruction through the Use of all the Styles

Each instructional session should be linked to all these intelligences, targeting all students.

Diversifying Curriculum So That It is Intelligence-Rich and Intelliegnce-Fair

The "curriculum wheel" can integrate multiple intelligences into a curriculum. It is a spatial representation that can help us see how a curriculum or unit can be designed around intelligences.

Often, in completing tasks or engaging in activities, we will rely on our strongest intelligences to make a sense of material. This reliance on the most-developed intelligences is known as "translation".

"Visualizing Vocabulary" strategy taps into the power of translation. This is very important because it allows the student to learn how to use their strongest intelligence to support their learning.

Pathways to Understanding Broad Topics

Curriculum should be designed around topics and phenomena that Gardner called "icebergs" – broad and robust topics, through which students and teachers are engaged in developing a deep understanding of the world.

Introduction to Learning Styles

According to Jung, human difference is based on two fundamental cognitive functions: perception (how we absorb information) and judgement (how we process information). In this way, people perceive concretely through the senses or abstractly through the intuition.

Sensing tells us that something exists; thinking tells us what that thing is; feeling tells us whether it is agreeable or not; intuition tells us from whence it comes and where it is going.

Perception: Sensing and Intuition

We need sensing to characterize and clarify reality, and we need intuition to determine the big concepts that give reality meaning and to predict potential changes within that reality.

Judgment: Thinking and Feeling

The mind needs to make a judgment about how to use this information. Objectivity is the hallmark of the thinking functions – employing logic, reason, and evidence. Feeling works on the subjective, giving us a purpose for making decisions.

Multiple intelligences are concerned with "what" is being learned (content), whereas styles are concerned with "how" it is being learned (methodology).

When we understand the basics of learning styles, we can engage in the process of self-analysis. Every person develops and uses a mixture of learning throughout life, usually flexing and adapting styles to fit various contexts and meet various demands.

Educators should help students develop their unique learning-style profile, define individual strengths and weaknesses and give advice on how to balance the entire picture: NT- ST – NF – SF.

Differentiating Instruction Through the Use of All the Styles

When it comes to learning styles, the ultimate learning goal is to achieve balance by developing ability in all four areas. One of the best ways to achieve that is to use a strategy called "Teaching Around the Wheel". In using this method, the teacher plans and delivers a series of instructional episodes in all four learning styles, thereby meeting the learning needs of all learners.

Brainstorm ideas and topics so that you can make sure your curriculum is robust.

Use Task Rotation to diversify assessment correlated to styles.

Connecting the Models

Classroom teachers must address differences in ways that are feasible, practical and easy to implement.

The Principles of Diversity

Encourage diversity throughout the process of connecting the models, using 4 principles:

- ❖ Principle 1 : Comfort in the classroom
- ❖ Principle 2 : Challenge ("flow" of the mind until the mind seeks to apply itself to a nonthreatening, but mentally demanding task)
- ❖ Principle 3 : Depth (through thinking intently about the content)
- ❖ Principle 4 : Motivation (through topics that interest learners)

Some Texts and Tables from the Book

FIGURE 1.3
INTELLIGENCES AS DISPOSITIONS

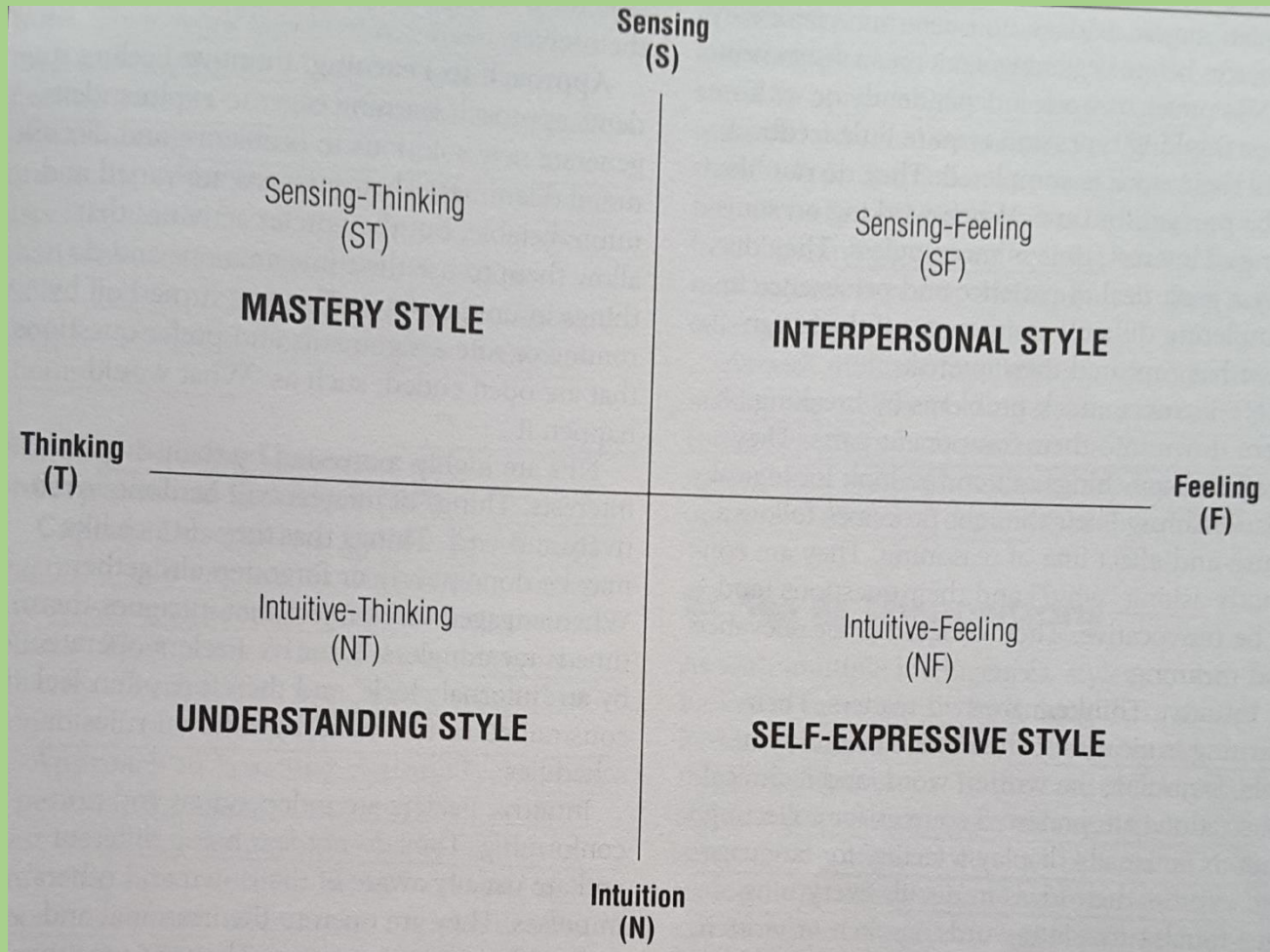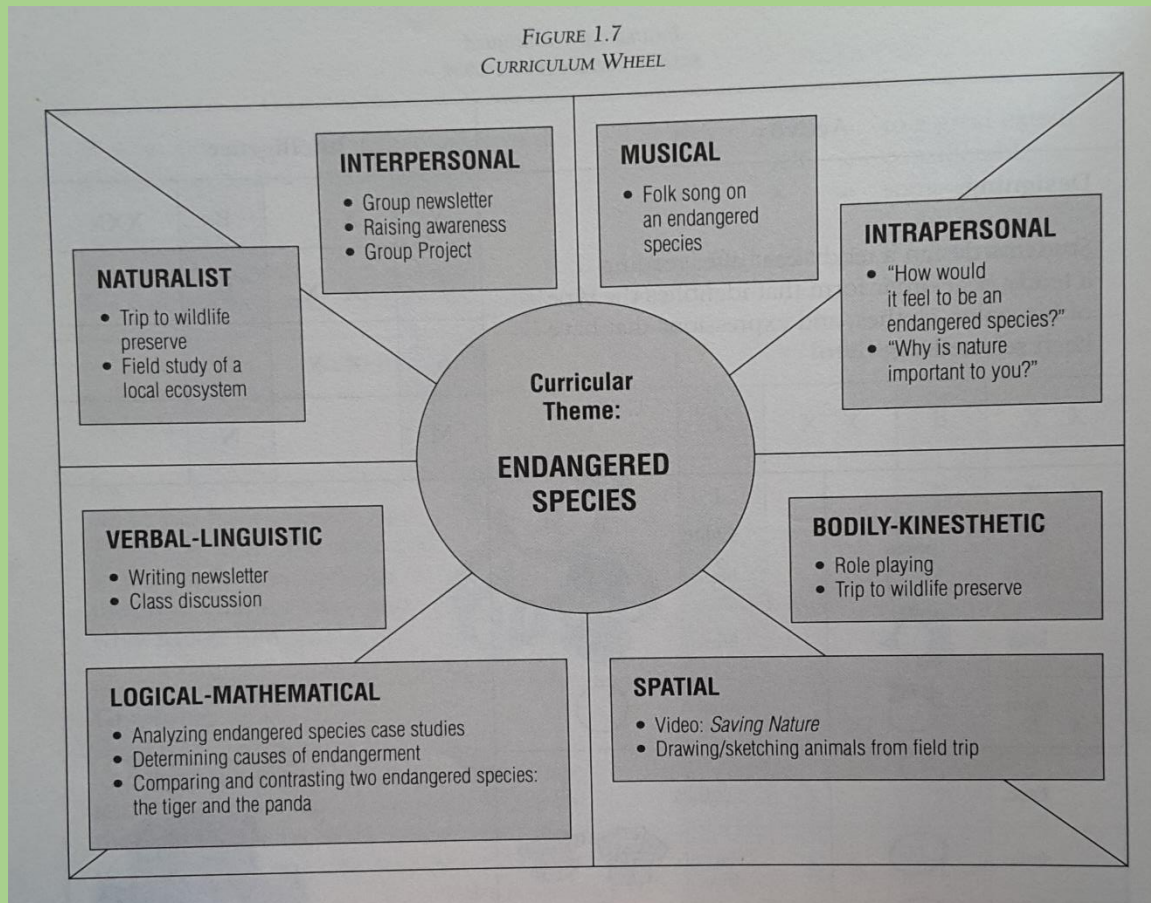| Disposition/Intelligence	Sensitivity to:	Inclination for:	Ability to:
Verbal-Linguistic Intelligence	the sounds, meanings, structures, and styles of language	speaking, writing, listening, reading	speak effectively (teacher, religious leader, politician) or write effectively (poet, journalist, novelist, copywriter, editor)
Logical-Mathematical Intelligence	patterns, numbers and numerical data, causes and effects, objective and quantitative reasoning	finding patterns, making calculations, forming and testing hypotheses, using the scientific method, deductive and inductive reasoning	work effectively with numbers (accountant, statistician, economist) and reason effectively (engineer, scientist, computer programmer)
Spatial Intelligence	colors, shapes, visual puzzles, symmetry, lines, images	representing ideas visually, creating mental images, noticing visual details, drawing and sketching	create visually (artist, photographer, engineer, decorator) and visualize accurately (tour guide, scout, ranger)
Bodily-Kinesthetic Intelligence	touch, movement, physical self, athleticism	activities requiring strength, speed, flexibility, hand-eye coordination, and balance	use the hands to fix or create (mechanic, surgeon, carpenter, sculptor, mason) and use the body expressively (dancer, athlete, actor)
Musical Intelligence	tone, beat, tempo, melody, pitch, sound	listening, singing, playing an instrument	create music (songwriter, composer, musician, conductor) and analyze music (music critic)
Interpersonal Intelligence	body language, moods, voice, feelings	noticing and responding to other people's feelings and personalities	work with people (administrators, managers, consultants, teachers) and help people identify and overcome problems (therapists, psychologists)
Intrapersonal Intelligence	one's own strengths, weaknesses, goals, and desires	setting goals, assessing personal abilities and liabilities, monitoring one's own thinking	meditate, reflect, exhibit self-discipline, maintain composure, and get the most out of oneself
Naturalist Intelligence	natural objects, plants, animals, naturally occurring patterns, ecological issues	identifying and classifying living things and natural objects	analyze ecological and natural situations and data (ecologists and rangers), learn from living things (zoologist, botanist, veterinarian) and work in natural settings (hunter, scout)

The Four Learning Styles


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                        Sensing
                          (S)

      Sensing-Thinking              Sensing-Feeling
          (ST)                          (SF)

      MASTERY STYLE              INTERPERSONAL STYLE

 Thinking                                              Feeling
   (T) ─────────────────────────────────────────────── (F)

      Intuitive-Thinking             Intuitive-Feeling
           (NT)                          (NF)

    UNDERSTANDING STYLE          SELF-EXPRESSIVE STYLE

                        Intuition
                          (N)
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FIGURE 1.7
CURRICULUM WHEEL

INTERPERSONAL
- Group newsletter
- Raising awareness
- Group Project

MUSICAL
- Folk song on an endangered species

INTRAPERSONAL
- "How would it feel to be an endangered species?"
- "Why is nature important to you?"

NATURALIST
- Trip to wildlife preserve
- Field study of a local ecosystem

Curricular Theme:

ENDANGERED SPECIES

VERBAL-LINGUISTIC
- Writing newsletter
- Class discussion

BODILY-KINESTHETIC
- Role playing
- Trip to wildlife preserve

LOGICAL-MATHEMATICAL
- Analyzing endangered species case studies
- Determining causes of endangerment
- Comparing and contrasting two endangered species: the tiger and the panda

SPATIAL
- Video: *Saving Nature*
- Drawing/sketching animals from field trip

FIGURE 1.12
COLLECTING CLASSROOM EXAMPLES

Intelligence	Examples of Classroom Activities	Examples from My Classroom
Verbal-Linguistic	discussions, debates, journal writing, conferences, essays, stories, poems, storytelling, listening activities, reading	
Logical-Mathematical	calculations, experiments, comparisons, number games, using evidence, formulating and testing hypotheses, deductive and inductive reasoning	
Spatial	concept maps, graphs, charts, art projects, metaphorical thinking, visualization, videos, slides, visual presentations	
Bodily-Kinesthetic	role-playing, dance, athletic activities, manipulatives, hands-on demonstrations, concept miming	
Musical	playing music, singing, rapping, whistling, clapping, analyzing sounds and music	
Interpersonal	community-involvement projects, discussions, cooperative learning, team games, peer tutoring, conferences, social activities, sharing	
Intrapersonal	student choice, journal writing, self-evaluation, personal instruction, independent study, discussing feelings, reflecting	
Naturalist	ecological field trips, environmental study, caring for plants and animals, outdoor work, pattern recognition	

FIGURE 2.5
STYLE SUMMARY

The Sensing-Thinking (ST) or Mastery Learner

PREFERS TO LEARN BY:
- seeing tangible results
- practicing what he has learned
- following directions one step at a time
- being active rather than passive
- knowing exactly what is expected of her, how well the task must be done and why

LEARNS BEST FROM:
- drill
- demonstration
- practice
- hands-on experience

LIKES:
- doing things that have immediate, practical use
- being acknowledged for thoroughness and detail
- praise for prompt and complete work
- immediate feedback (rewards, privileges, etc.)

DISLIKES:
- completing tasks for which there are no practical uses
- activities that require imagination and intuition
- activities with complex directions
- open-ended activities without closure or pay-off
- activities that focus on feelings or other intangible results

The Sensing-Feeling (SF) or Interpersonal Learner

PREFERS TO LEARN BY:
- studying about things that directly affect people's lives rather than impersonal facts or theories
- receiving personal attention and encouragement from his teachers
- being part of a team—collaborating with other students
- activities that help her learn about herself and how she feels about things

LEARNS BEST FROM:
- group experiences and projects
- loving attention
- personal expression and personal encounters
- role playing

LIKES:
- receiving personal attention and encouragement
- opportunities to be helpful in class
- personal feedback
- sharing personal feelings and experiences with others

DISLIKES:
- long periods of working alone silently
- emphasis on factual detail
- highly competitive games where someone loses
- detailed and demanding routines

The Intuitive-Thinking (NT) or Understanding Learner

PREFERS TO LEARN BY:
- studying about ideas and how things are related
- planning and carrying out a project of his own making and interest
- arguing or debating a point based on logical analysis
- problem solving that requires collecting, organizing, and evaluating data

LEARNS BEST FROM:
- lectures
- reading
- logical discussions and debates
- projects of personal interest

LIKES:
- time to plan and organize her work
- working independently or with other intuitive-thinking types
- working with ideas and things that challenge him to think, to explore, to master

DISLIKES:
- routine or rote assignments
- memorization
- concern for details
- rigid rules and predetermined procedures

The Intuitive-Feeling (NF) or Self-Expressive Learner

PREFERS TO LEARN BY:
- being creative and using his imagination
- planning and organizing her work in her own creative ways
- working on a number of things at one time
- searching for alternative solutions to problems beyond those normally considered
- discussing real problems and looking for real solutions

LEARNS BEST FROM:
- creative and artistic activities
- open-ended discussions of personal and social values
- activities that enlighten and enhance—myths, human achievement, dramas, etc.

LIKES:
- contemplation
- being able to learn through discovery
- opportunity to plan and pursue his own interests
- recognition for personal insights and discoveries

DISLIKES:
- too much attention to detail
- facts, memorization, rote learning
- tasks with predetermined correct answers
- detailed and demanding routines
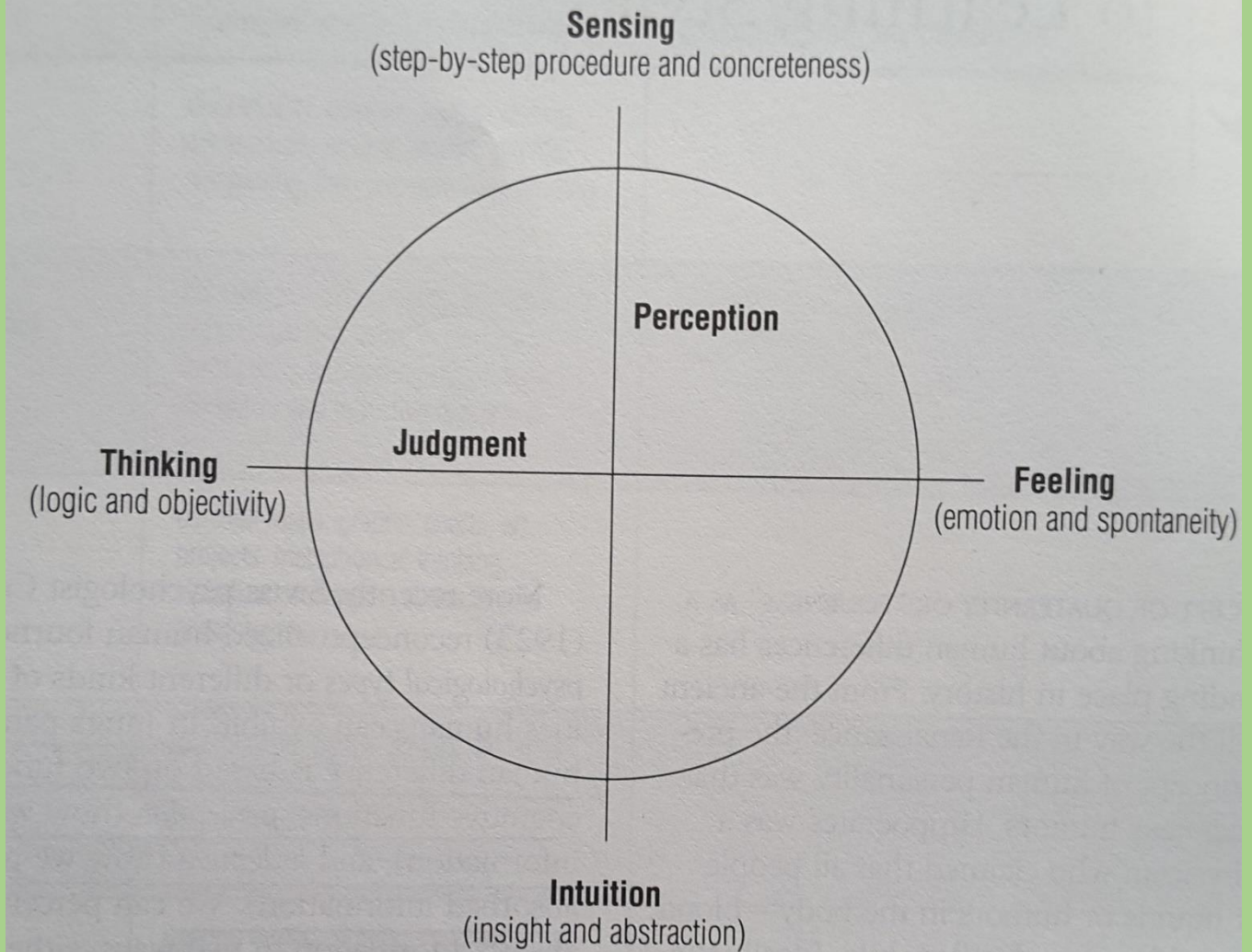
FIGURE 2.1
FUNCTION MANDALA

Sensing
(step-by-step procedure and concreteness)

Perception

Judgment

Thinking
(logic and objectivity)

Feeling
(emotion and spontaneity)

Intuition
(insight and abstraction)

FIGURE 1.3
INTELLIGENCES AS DISPOSITIONS

Disposition/Intelligence	Sensitivity to:	Inclination for:	Ability to:
Verbal-Linguistic Intelligence	the sounds, meanings, structures, and styles of language	speaking, writing, listening, reading	speak effectively (teacher, religious leader, politician) or write effectively (poet, journalist, novelist, copywriter, editor)
Logical-Mathematical Intelligence	patterns, numbers and numerical data, causes and effects, objective and quantitative reasoning	finding patterns, making calculations, forming and testing hypotheses, using the scientific method, deductive and inductive reasoning	work effectively with numbers (accountant, statistician, economist) and reason effectively (engineer, scientist, computer programmer)
Spatial Intelligence	colors, shapes, visual puzzles, symmetry, lines, images	representing ideas visually, creating mental images, noticing visual details, drawing and sketching	create visually (artist, photographer, engineer, decorator) and visualize accurately (tour guide, scout, ranger)
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FIGURE 4.22
THINKING VERBS BY STYLE AND OBJECTIVES

Goal	Mastery	Understanding	Self-Expressive	Interpersonal
Content acquisition	Examine Fact Find Gather Inspect Look-up Observe Recollect Review Scrutinize Seek	Ask Assess Inquire Investigate Probe Question Read Research Study	Anticipate Brainstorm Explore Generate Search Speculate	Elicit a response Feel Interview Listen Pursue Reflect Survey
Critical analysis	Assess Categorize Check Determine List Organize Prepare Sequence Take Notes Trace	Analyze Classify Compare Critique Deduce Evaluate Imply Infer Interpret Reason Resolve Weigh	Apply Combine Conceive Experiment Gauge Generalize Imagine Integrate Picture Predict Systematize	Appraise Appreciate Decide Deliberate Personalize Prioritize Rate Relate Value
Application of learning	Build Construct Depict Form Make Manufacture Solve	Advise Analyze Compose Develop Formulate Plan Prove Respond Write	Apply Create Design Draw Fabricate Frame Generate Invent Metaphorize Originate Paint Picture Produce	Coach Decide Editorialize Personify Role play Share
Dissemination and use of learning	Describe Display Demonstrate Inform Present Report Show	Convince Debate Disclose Explain Persuade Publish Teach Dialogue	Advertise Articulate Broadcast Communicate Disseminate Elaborate Elucidate Perform Produce Write	Advise Act Coach Convince Discuss Dialogue
Evaluation and improvement	Check Correct Reward Test	Assess Critique Evaluate Judge Weigh	Appreciate Amend Gauge Improve Respond Reflect	Appraise Approve Decide Evaluate React Value

RESPONSES TO THE QUESTION "WHY DO YOU WRITE?"

Which response represents which *style* of verbal-linguistic intelligence (Mastery, Interpersonal, Understanding, or Self-Expressive)?

Response #1   Style _____

I used to write a lot when I was younger. I wrote notes to my friends. I kept a diary for a long time. I even wrote some poems. Every now and then I'd feel like I just had to write about the way I felt and what it might mean. I don't suppose it was very good, but I liked it. It was nice to know I could do that and it made me feel like I was getting to know myself better.

When I write I think a lot about whom I'm writing to and what I want to say and how I want them to feel. When I'm getting started I like to talk about what I'm going to do or sometimes I'll just stare off into space and doodle. And then I will get an idea and it all comes out in a gush. Sometimes when I look back on it, I hate it. But mostly what I write is okay. It sounds normal, like the way I talk.

The best thing I ever wrote was this poem about loneliness and roller-coasters and the people all around you screaming and you're still alone. I liked that poem a lot.

Response #2   Style _____

I'm always writing. I may not write it all down but I'm always writing. Even when I was very young there were always voices in my head, pictures in my mind. My mother would send me to the store and all the way home I'd be telling myself the story of my going to the store.

Writing is like the sea. That old wave of writing starts to build. You can feel it moving through every part of you, beating like a second heart, and then you're at the crest and you hold your breath and it just rolls out of you and all you can do is hold on and ride it out twisting and turning and watching things gleam and slide in the green water. And then you're up on the sand and half of the time you just want to walk away from it and the other half you can't wait to get out there and find another wave.

Response #3   Style _____

I write when I have to get the job done. Writing for me is neither pleasure nor pain. It's a job and I try to get it done as quickly as possible. I prefer writing assignments where the teacher tells me exactly what she wants and when she wants it.

For a big piece I'll usually begin by making a list of things I need to do. Then as I do them, I'll check them off. I don't believe in fancy outlines. I simply organize material in three groups: the beginning, the middle, and the end. Then I start writing. I like my first draft to be my last draft before recopying. I take a lot of time on recopying, making sure the pieces look good. I try to write in clear, simple language that doesn't force me to keep track of a lot of grammatical turns of phrase. The nicest thing a reader can say to me is that my writing is plain and clear and that my point is evident.

Response #4   Style _____

Writing has many purposes. You can use it to formulate new ideas, review material you have been studying, plan experiments or political activities, or persuade people over to your side. I write to think. That is to say, writing helps me focus my ideas so that they are more powerful.

My favorite kind of writing is editorial writing or persuasive essays. I begin by thinking of a provocative topic like euthanasia, and then by creating a question I want to explore, such as "Should euthanasia be legal?" Once I have a question, I collect lots of information that deals with many different positions on the issue. Usually by this time I have my own opinion. Then I make an outline for my essay which permits me to detach each of my subheadings (arguments for euthanasia, arguments against euthanasia, my opinion) and use each as the focus of a separate writing task. When I'm done writing, I go back to make sure everything's logical and well written.

APPENDIX
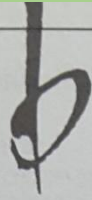
Learning Styles Inventory for Adults: Sample Pages

Choosing Self Descriptors

In each of the following twenty-five horizontal sets, rank the four behavioral descriptors in order of: first preference (5), second preference (3), third preference (1), fourth preference (0).

Be sure to assign a different weighted number (5, 3, 1, 0) to each of the four descriptors in each set. Do not make ties. Rank the descriptors according to those which best describe you, i.e., how you approach learning. Note that a rank of zero does not mean a descriptor does not apply to you; it only means that descriptor is your least preferred.

Please answer every item and keep in mind that there are no right or wrong answers. The aim of this inventory is to describe how you learn, not to evaluate your learning ability or to assign labels. If a set of words is hard to rank at first reading, then go to the next set. Complete the missing set after you've finished all the other items.

> Descriptors are to be analyzed horizontally as sets of four across the lettered columns. Do not compare descriptors vertically.

	A	B	C	D
1.	Creative	Personal	Organized	Analytical
2.	Facts	Formulas	Passions	People
3.	Spontaneous	Flexible	Literal	Interpretive
4.	Harmonize	Question	Utilize	Imagine
5.	Create	Compete	Cooperate	Critique
6.	Remember	Reason	Relate Personally	Reorganize
7.	Discovery	Debate	Directions	Discussion
8.	Patterns	Human Interactions	Details	Possibilities
9.	Feelings	Objects	Ideas	Insights
10.	Action	Wonder	Warmth	Wisdom
11.	Eureka!	Trial & Error	Gut Feeling	Strategy
12.	Realistic	Theoretical	Aesthetic	Humanistic
13.	Specifics	Concepts	Values	Rapport
14.	Logic	Precision	Persuasion	Predictions
15.	Knowing	Relating	Expressing	Understanding
16.	Idealize	Systematize	Socialize	Routinize
17.	Intellectual	Compassionate	Pragmatic	Idealistic
18.	Invention	Intimacy	Information	Inquiry
19.	Loyalties	Rules	Principles	Metaphors
20.	Inspirational	Logical	Experiential	Methodical
21.	Argument	Accuracy	Affiliation	Alternatives
22.	Clarity	Curiosity	Empathy	Originality
23.	Explanation	Extrapolation	Emulation	Example
24.	Enthusiasm	Experience	Effort	Examination
25.	Symmetrical	Sequential	Scientific	Social

FIGURE 5.13
ASSESSMENT DESIGN WORKSHEET

Every learning task contains . . .

A Content Focus

My task will focus on: the causes of the Dust Bowl and how feelings get preserved.

At Least One Style of Thought (Learning Style)

Self-Expressive: Pretend I'm in the Dust Bowl. Create a product that reflects how I feel.
Interpersonal: Try to identify with the feelings of people in history.

At Least One Intelligence

Musical: Write a folk song.
Interpersonal: Perform it for the class.
Verbal-Linguistic: Study lyrics to songs by Arlo Guthrie and Bob Dylan to find out what folk lyrics sound like.

Description of Task

I am going to write and sing a folk song that explains what people went through during the Dust Bowl. It is the heart of the Dust Bowl. The crops are gone, so there's not much to do but worry. I'm going to write a song about what I am going through. I want to save my feelings for future generations so that they know what happened, why it happened, and how it has affected me.

FIGURE 4.3
COMBINING THE MODELS

V	
L	
S	
M	
B	
P	
I	
N	

MASTERY	INTERPERSONAL
UNDERSTANDING	SELF-EXPRESSIVE
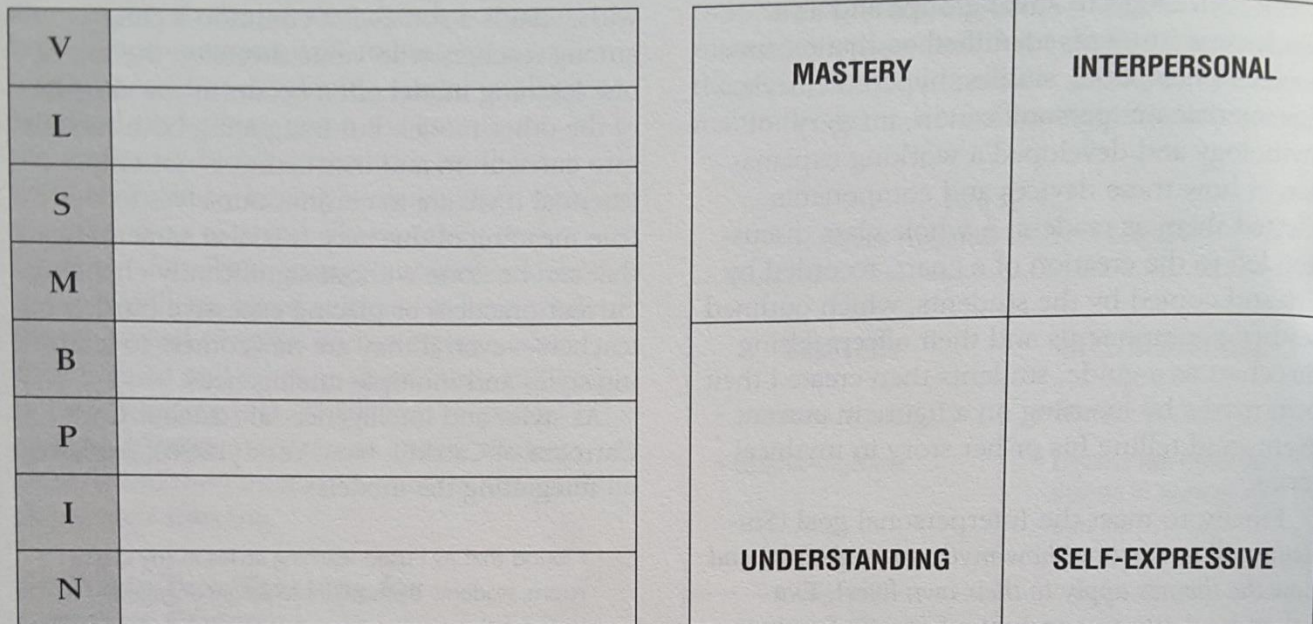
	MASTERY	UNDERSTANDING	SELF-EXPRESSIVE	INTERPERSONAL
V				
L				
S				
M				
B				
P				
I				
N				

Note: V = verbal-linguistic; L = logical-mathematical; S = spatial; M = musical; B = bodily-kinesthetic; P = interpersonal; I = intrapersonal; N = naturalist intelligence.

FIGURE 6.11
SAMPLE VISUALIZATION OF A STUDENT'S PROFILE

Learning Profile Report for:

age: 15   grade: 9   ethnic group:
Student number: 15122

Dominant Learning Styles:

Sensing-Thinking	73
Sensing-Feeling	48

Least used Learning Styles:

Intuitive-Feeling	29
Intuitive-Thinking	29

Quadrant Graph:

ST: 73   Sensing   SF: 48

Thinking ← → Feeling

NT: 29   Intuiting   NF: 29

Introvert/Extrovert
Preference Graph:

```
0    10    20    30    40    50    60    70    80    90    100
```

Introverted — 34

Extroverted — 66

Notes:

1) The four learning styles scores are each independent measures.
   Therefore, the style scores should not be expected to total 100.

2) Improperly marked items are not scored.
   On this survey all of the 36 questions were properly marked.