

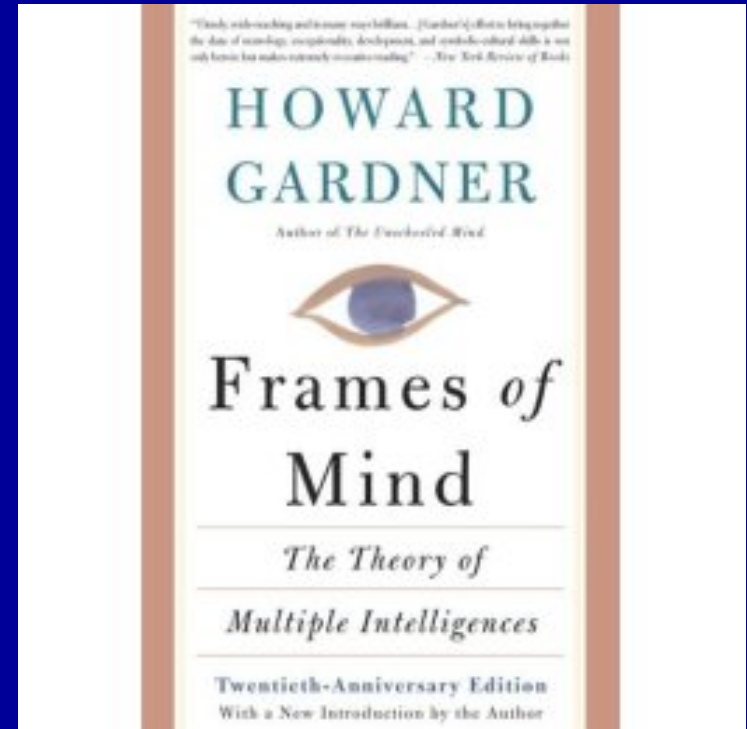
Frames of Mind

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History

Harvard Project on Human Potential - 1979

Questioned the notion of intelligence



Howard Gardner

Ph.D

Professor of Education at Harvard
University.

The Theory of Multiple Intelligences

- The theory of multiple intelligences was developed in 1983 by Dr. Howard Gardner, professor of education at Harvard University.
- This theory -- help to figure out how to succeed in learning and life.

The theory of multiple intelligences has

- grabbed the attention of many educators around the country
- hundreds of schools are currently using its philosophy to redesign the way it educates

- The basic concept of his theory is that people could be intelligent in more than one way.
- Since birth, people may develop a variety of particular talents and can be stronger in one or more aspects of intelligence and less so in others

Howard Gardner (1983) - Frames of Mind

“ We are not all the same, we do not all have the same kinds of minds, and education works most effectively for most individuals if. . .human differences are taken seriously.”

INTELLIGENCE

- Ability to solve problems or produce products that are considered valuable in one or several cultures

Gardner H (1999) Intelligence reframed: Multiple intelligences for the 21st century New York: Basic Books

- The traditional idea of intelligence, based on I.Q. testing, is far too limited.
- The schools and culture focus most of their attention on linguistic and logical-mathematical intelligence.
- labeled “learning disabled,” “ADD (attention deficit disorder),” or simply underachievers, when their unique ways of thinking and learning aren’t addressed by a heavily linguistic or logical-mathematical classroom.

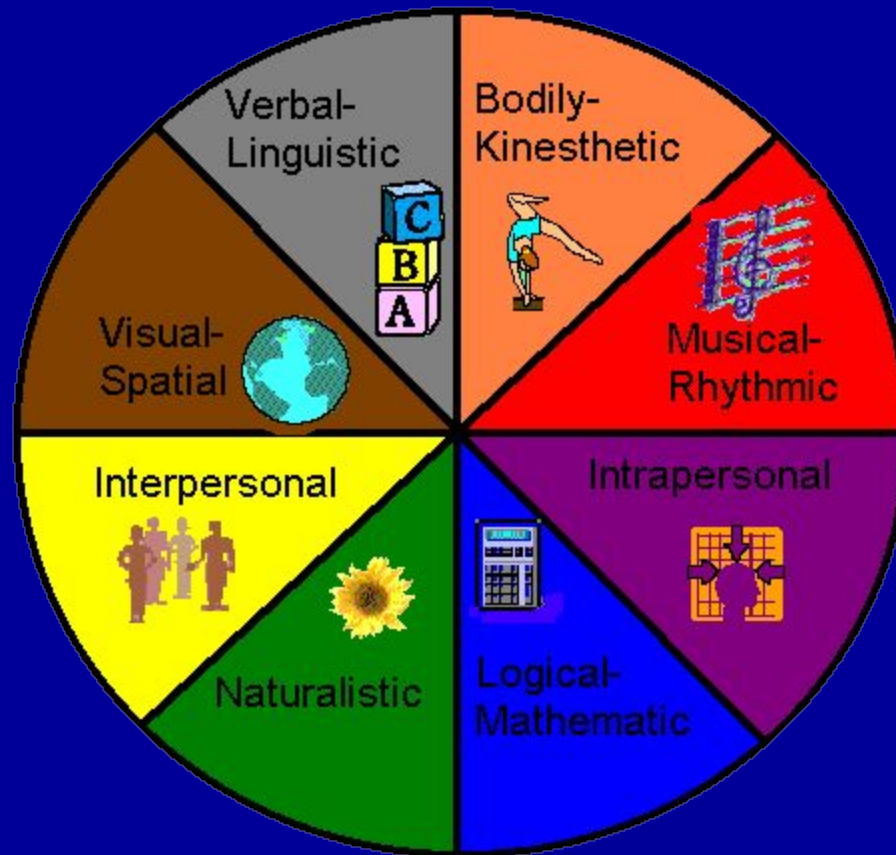
- Every people has the opportunity to learn in ways harmonious with their unique minds
- Cause - increase effective teaching and remove barriers to student learning

- first defined 7 types of intelligence
- awareness of one person toward ability, interests, fears
- information to make important decisions in life.
- **understanding of the self** is the key point of this intelligence

Overview of MI Theory

1. **Linguistic intelligence** ("word smart"):
2. **Logical-Mathematical intelligence** ("number/reasoning smart")
3. **Visual-Spatial intelligence** ("picture smart")
4. **Bodily-Kinesthetic intelligence** ("body smart")
5. **Musical intelligence** ("music smart")
6. **Intrapersonal intelligence** ("self smart")
7. **Interpersonal intelligence** ("people smart")

A CHART OF MULTIPLE INTELLIGENCES



Applying M I theory

Students who understand their own balance of multiple intelligences can:

- Learn to value their individual strengths
- Better manage their own learning

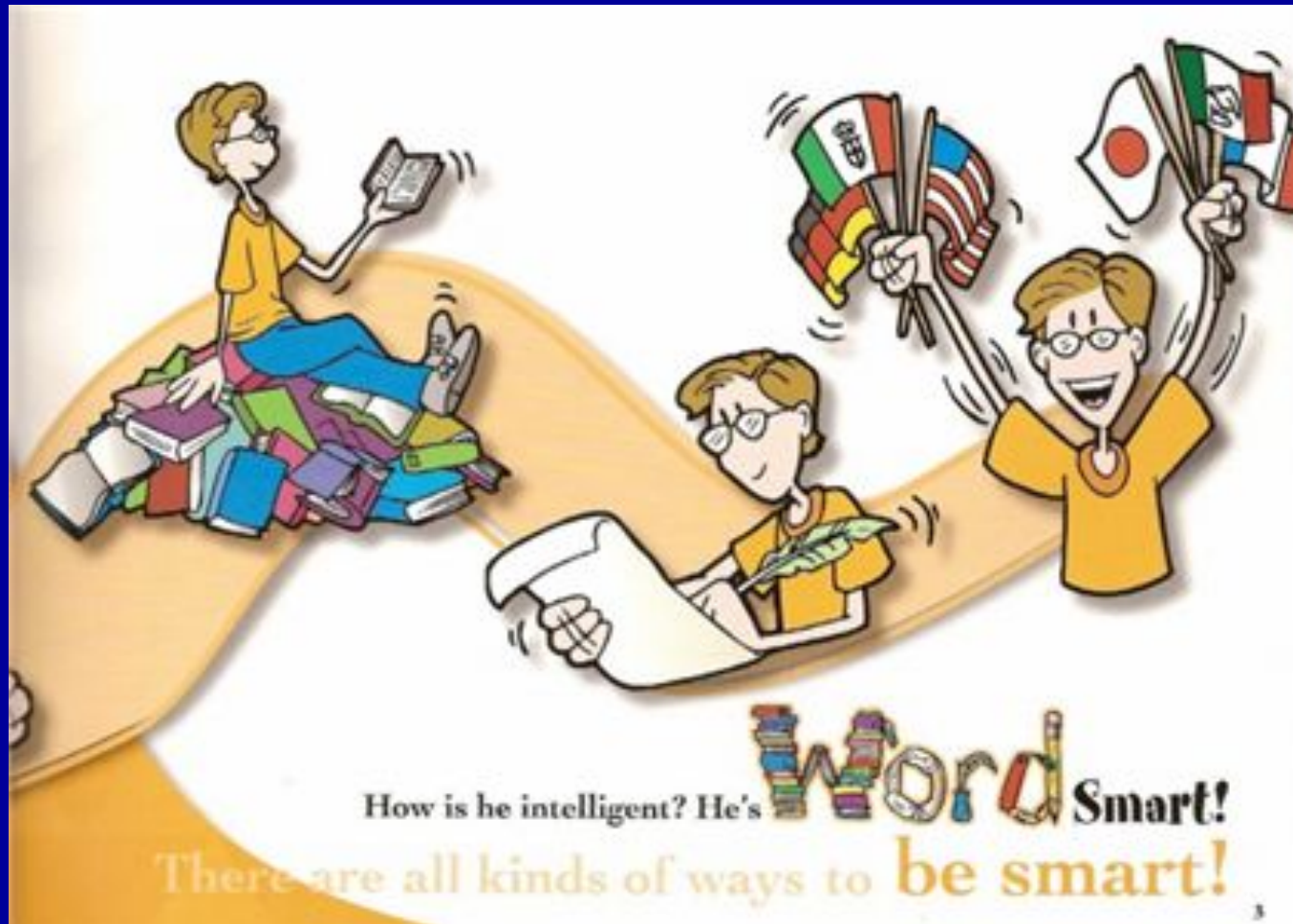
Teachers who apply M.I. theory can:

- Provide more opportunities for students to cultivate their talents and improve their weaknesses
- Engage students with course material in ways that make sense to them

Linguistic intelligence

- Using words effectively.
- These learners have highly developed auditory skills and often think in words.
- They like reading, playing word games, making up poetry or stories.
- They can be taught by encouraging them to say and see words, read books together.
- Tools include computers, games, multimedia, books, tape recorders, and lecture.

WORD SMART



Linguistic intelligence

- The ability to use language.
- Characteristics
 - Good at remembering written and spoken information
 - Enjoys reading and writing
 - Good at debating or giving persuasive speeches
 - Able to explain things well

Linguistic intelligence

- Teachers and university professors, writers, lawyers, religious leaders, poets, journalists and translators often receive a high score in this intelligence

Logical-Mathematical Intelligence

- Reasoning, calculating.
- Think conceptually, abstractly and are able to see and explore patterns and relationships.
- They like to experiment, solve puzzles, ask cosmic questions.
- They can be taught through logic games, investigations, mysteries.

LOGIC SMART



Logical-Mathematical Intelligence

- Characteristics
 - Excellent problem-solving skills
 - Enjoys thinking about abstract ideas
 - Likes conducting scientific experiments
 - Good at solving complex computations

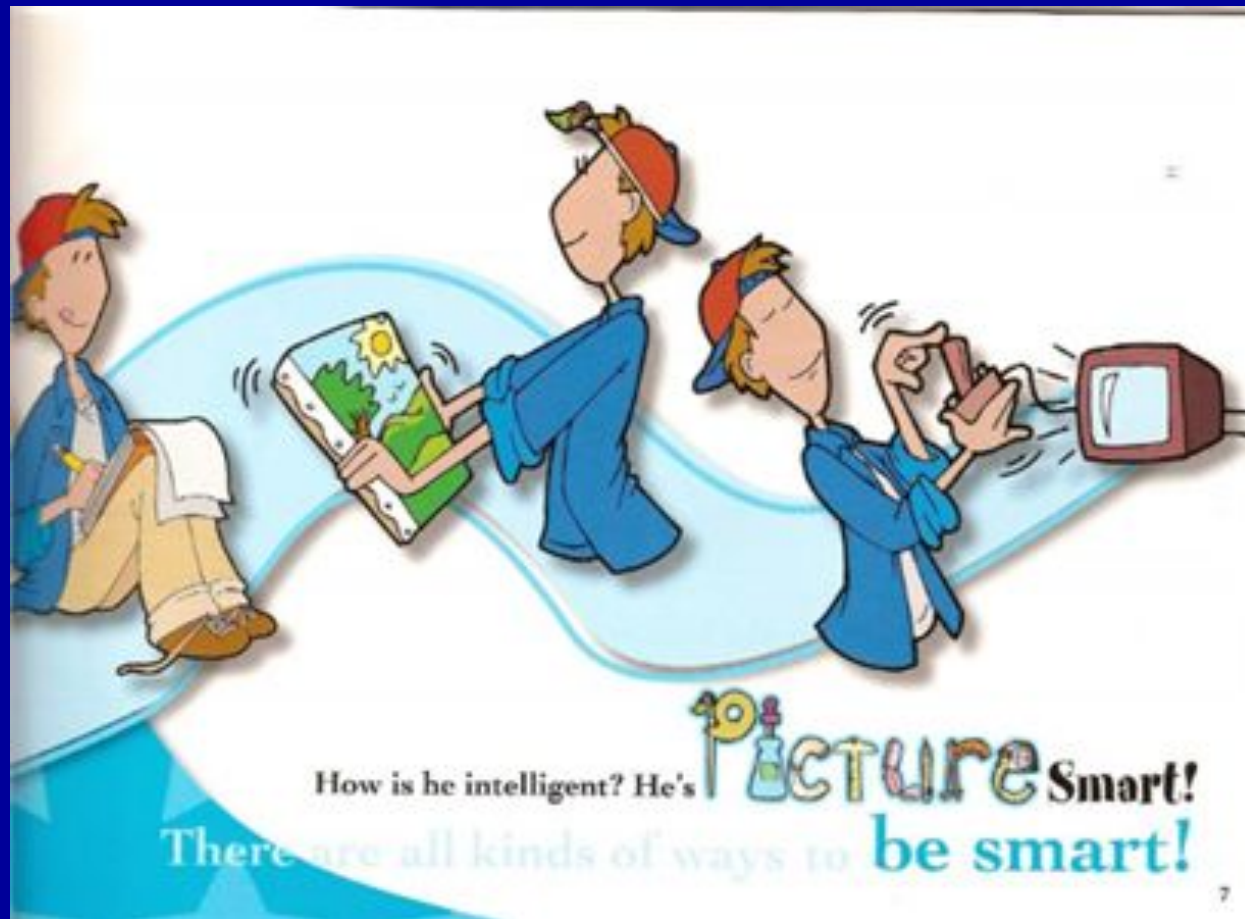
Logical-Mathematical Intelligence

- Scientists, researchers, engineers, computer programmers, mathematicians, and accountants need a high level of this intelligence

Visual-Spatial intelligence

- Think in terms of physical space, as do architects and sailors.
- Very aware of their environments.
- They like to draw, do jigsaw puzzles, read maps, daydream.
- They can be taught through drawings, verbal and physical imagery.
- Tools include models, graphics, charts, photographs, drawings, 3-D modeling, video, videoconferencing, television, multimedia, texts with pictures/charts/graphs.

PICTURE SMART



Visual-Spatial intelligence

The ability to perceive the world accurately and to recreate or transform aspects of that world.

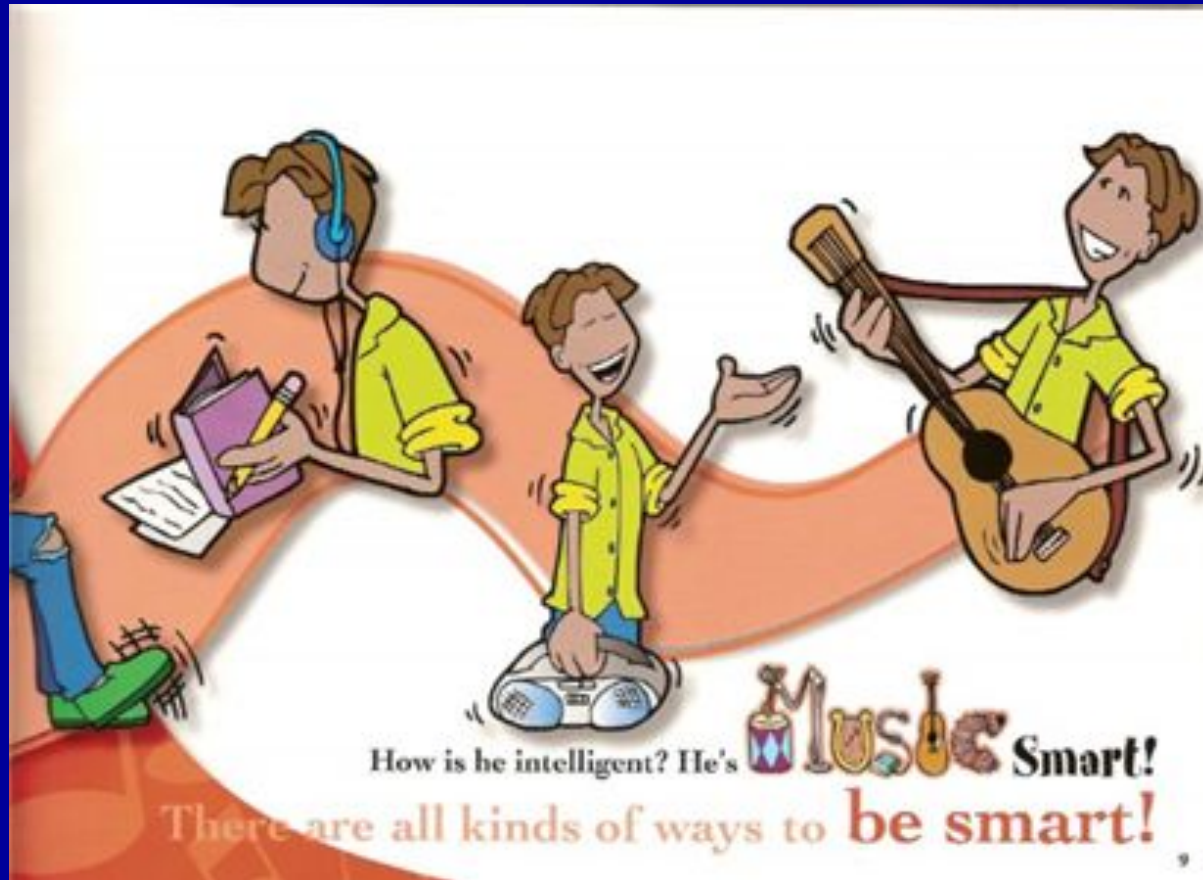
- Characteristics
 - Enjoys reading and writing
 - Good at putting puzzles together
 - Good at interpreting pictures, graphs, and charts
 - Enjoys drawing, painting, and the visual arts
 - Recognizes patterns easily

- Sailors, engineers, mechanics, architects, inventors, sculptors, and interior designers benefit from this intelligence in their work.

Musical intelligence

- Show sensitivity to rhythm and sound.
- They love music, but they are also sensitive to sounds in their environments.
- They may study better with music in the background.
- They can be taught by turning lessons into lyrics, speaking rhythmically, tapping out time.
- Tools include musical instruments, music, radio, stereo, CD-ROM, multimedia.

MUSIC SMART



Musical intelligence

Sensitivity to pitch, melody, rhythm, and tone.

- Characteristics
 - Enjoys singing and playing musical instruments
 - Recognizes musical patterns and tones easily
 - Good at remembering songs and melodies
 - Rich understanding of musical structure, rhythm, and notes

Bodily-kinesthetic intelligence

- Use the body effectively, like a dancer or a surgeon.
- Keen sense of body awareness.
- They like movement, making things, touching.
- They communicate well through body language and be taught through physical activity, hands-on learning, acting out, role playing.
- Tools include equipment and real objects.

BODY SMART



Bodily-kinesthetic intelligence

The ability to use the body skillfully and handle objects skillfully.

- Characteristics
 - Good at dancing and sports
 - Enjoys creating things with his or her hands
 - Excellent physical coordination
 - Tends to remember by doing, rather than hearing or seeing

Bodily-kinesthetic intelligence

- Dancer
- Builder
- Sculptor
- Actor

Intrapersonal intelligence

- Understanding one's own interests, goals.
- These learners tend to shy away from others.
- They're in tune with their inner feelings; they have wisdom, intuition and motivation, as well as a strong will, confidence and opinions.
- They can be taught through independent study and introspection.
- Tools include books, creative materials, diaries, privacy and time.
- They are the most independent of the learners.

SELF SMART



Intrapersonal intelligence

The ability to access one's emotional life as a means of understanding oneself and others.

- Characteristics
 - Good at analyzing his or her strengths and weaknesses
 - Enjoys analyzing theories and ideas
 - Excellent self-awareness
 - Clearly understands the basis for his or her own motivations and feelings

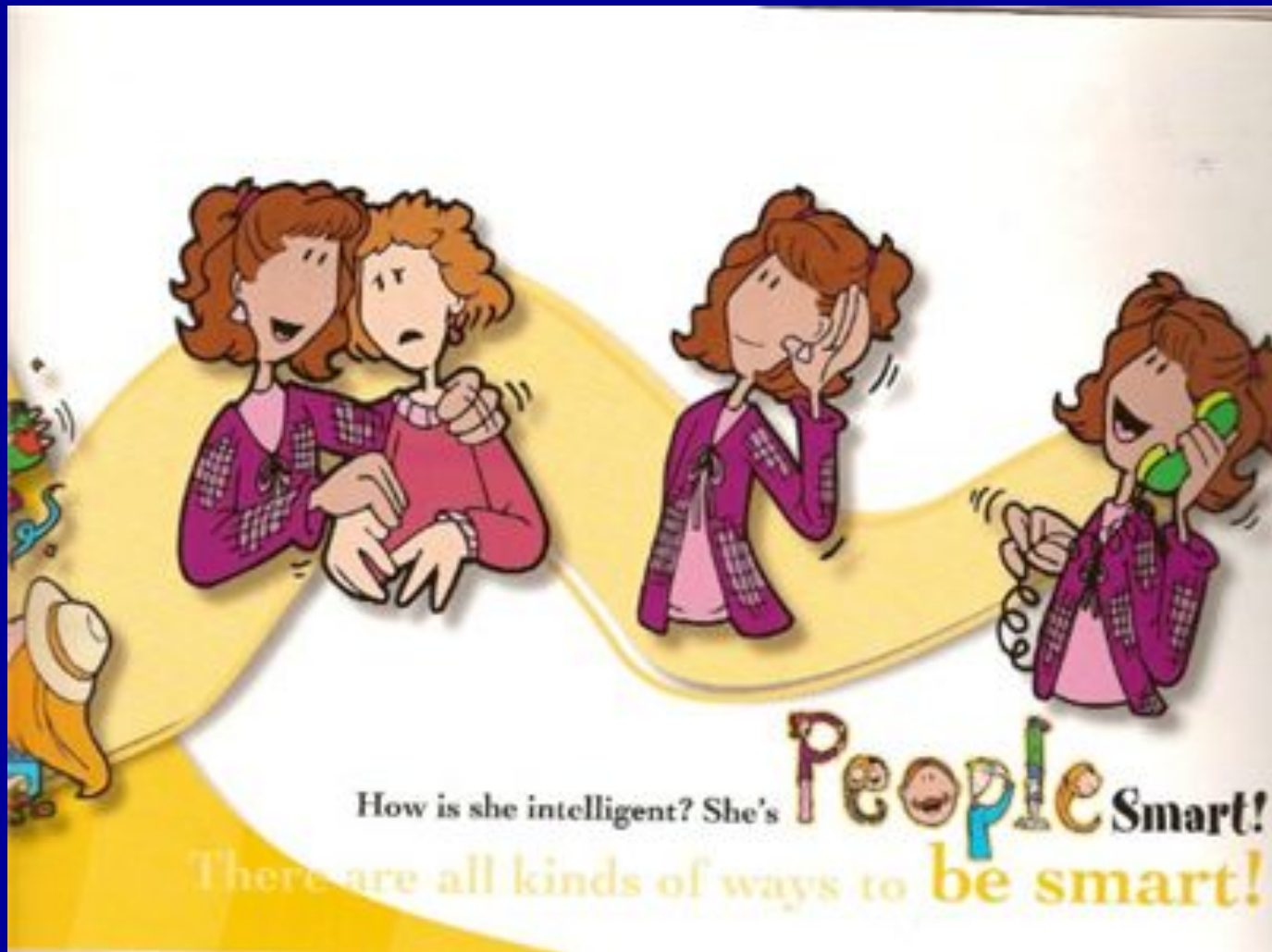
Intrapersonal intelligence

- Researchers, theorists, and philosophers need to have a high level of intrapersonal intelligence

Interpersonal intelligence

- Understanding, interacting with others.
- These students learn through interaction.
- They have many friends, empathy for others, street smarts.
- They can be taught through group activities, seminars, dialogues.
- Tools include the telephone, audio conferencing, time and attention from the instructor, video conferencing, writing, computer conferencing, E-mail.

PEOPLE SMART



Interpersonal intelligence

- The ability to understand people and relationships.
- Characteristics
 - Good at communicating verbally
 - Skilled at nonverbal communication
 - Sees situations from different perspectives
 - Creates positive relationships with others
 - Good at resolving conflict in groups

Interpersonal intelligence

- teachers, university professors, politicians, religious leaders, therapists, traders, and salesmen rely on interpersonal intelligence for their work

New Research

#8 Naturalist intelligence

enables human beings to recognize, categorize and draw upon certain features of the environment.

Others in various stages of consideration:

- **Existential intelligence**

Naturalistic Intelligence

- Characteristics
 - Interested in subjects such as botany, biology, and zoology
 - May enjoy camping, gardening, hiking, and exploring the outdoors
 - Doesn't enjoy learning unfamiliar topics that have no connection to nature

Naturalistic Intelligence

- Scientists, poets, artists, social scientists, hunters, farmers, and gardeners receive a high score in this dimension of intelligence

Existential Intelligence

- This allows people to raise profound questions about life, death, and their role in the world.
- This intelligence is associated with the fields of philosophy, religion, and aesthetics, and usually philosophers, religious leaders, artists and architects receive a high score in this intelligence

**What is YOUR Multiple
Intelligences profile?**

Questionnaires - www.businessballs.com

Multiple Intelligences Self-Assessment

This quiz asks 24 questions and will take less than five minutes to complete. Try not to think too hard -- just go with your first thought when describing your daily activities and interests. By the end, you may have some new insights into the way you think.

For more information about the theory of Multiple Intelligences, check out our in-depth article: [Multiple Intelligences: What Does the Research Say?](#) You may also want to watch an interview with [Howard Gardner: Big Thinkers: Howard Gardner on Multiple Intelligences](#).

How much time do you spend:

	None	Only a little	A fair amount	A lot	All the time
Getting lost in a good book.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doing crafts or arts projects.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trying to solve mysteries, riddles, or crossword puzzles.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2	Multiple Intelligences Test - based on Howard Gardner's MI Model		more info at businessballs.com	
3	(manual version - see businessballs.com for self-calculating version)			
<p>Score the statements: 1 = Mostly Disagree, 2 = Slightly Disagree, 3 = Slightly Agree, 4 = Mostly Agree</p> <p>Alternatively for speed, and if easier for young people - tick the box if the statement is more true for you than not.</p> <p>Adults over 16 complete all questions. Young people between 8-16 answer red questions only. This is page 1 of 2.</p> <p>A short version featuring the young people's questions only is available free from the businessballs website.</p>				
4				
5	Score or tick the statements in the white-out boxes only	Score		
6	I like to learn more about myself	<input type="checkbox"/>	<input type="checkbox"/>	1
7	I can play a musical instrument	<input type="checkbox"/>	<input type="checkbox"/>	2
8	I find it easiest to solve problems when I am doing something physical	<input type="checkbox"/>	<input type="checkbox"/>	3
9	I often have a song or piece of music in my head	<input type="checkbox"/>	<input type="checkbox"/>	4
10	I find budgeting and managing my money easy	<input type="checkbox"/>	<input type="checkbox"/>	5
11	I find it easy to make up stories	<input type="checkbox"/>	<input type="checkbox"/>	6
12	I have always been physically well co-ordinated	<input type="checkbox"/>	<input type="checkbox"/>	7
13	When talking to someone, I tend to listen to the words they use not just what they mean	<input type="checkbox"/>	<input type="checkbox"/>	8
14	I enjoy crosswords, word searches or other word puzzles	<input type="checkbox"/>	<input type="checkbox"/>	9
15	I don't like ambiguity, I like things to be clear	<input type="checkbox"/>	<input type="checkbox"/>	10
16	I enjoy logic puzzles such as 'sudoku'	<input type="checkbox"/>	<input type="checkbox"/>	11
17	I like to meditate	<input type="checkbox"/>	<input type="checkbox"/>	12
18	Music is very important to me	<input type="checkbox"/>	<input type="checkbox"/>	13
19	I am a convincing liar	<input type="checkbox"/>	<input type="checkbox"/>	14
	I play a sport or dance	<input type="checkbox"/>	<input type="checkbox"/>	15
multiple intelligences test intelligences descriptions				

Teaching Through Multiple Intelligences

Providing multiple pathways to learning!

having difficulty reaching a student in the more traditional linguistic or logical ways of instruction



the theory of multiple intelligences suggests several other ways



to facilitate effective learning.

CHALLENGE

- these differences
 - "challenge an educational system that assumes that everyone can learn the same materials in the same way and that a uniform, universal measure suffices to test student learning".

- Students learn in ways that are **identifiably distinctive**.
- The broad spectrum of students - and perhaps the society as a whole - would be better served if
 - disciplines could be presented in a numbers of ways
 - learning could be assessed through a variety of means.

- The need in all higher educational institutions is
 - for a major paradigm shift from teacher centered to learner-centered methodologies.
 - With the knowledge of what the students are capable of doing it is easier for the teachers to orchestrate the teaching-learning process.
 - A teacher becomes more of a facilitator than a 'lecturer'

Recommendations for Educators

- Individualize the teaching style (to suit the most effective method for each student)
- pluralize the teaching (teach important materials in multiple ways)

Researches of MI on Medical Students

Second year medical students

Sandars & Homer Autumn 2007

Multiple Intelligence (Learning preferences)	Number of students scoring highest on each intelligence (n=178)	Percentage of all students scoring highest on each intelligence (n=178)
Linguistic	25	14.0
Logical –Mathematical	20	11.2
Musical	50	28.1
Bodily-Kinaesthetic	94	52.8
Spatial-Visual	16	9.0
Interpersonal	85	47.8
Intrapersonal	17	9.6

Gardner's Multiple-Intelligences Profile and Its Relationship with Academic Performance

- Gardner's Multiple Intelligences profile of students of Tabriz University of Medical Sciences (TUOMS) in the academic year 2014-2015 and examine its relationship with their academic performance

- The results showed that among Gardner's Multiple Intelligences
 - existential,
 - intrapersonal,
 - interpersonal, and
 - verbal intelligence
- contribute the most to the selection of medical sciences as the path of education, and that verbal intelligence is associated with academic success.

Table 1. Descriptive statistics of study variables*

Variable	Medical
Age	26.76 ± 7.34
Academic performance	14.24 ± 1.48
Musical intelligence	12.26 ± 4.54
Bodily intelligence	13.88 ± 5.06
Visual intelligence	13.79 ± 4.46
Logical intelligence	14.56 ± 3.92
Verbal intelligence	15.76 ± 3.41
Interpersonal intelligence	16.06 ± 4.88
Intrapersonal intelligence	17.08 ± 4.21
Naturalist intelligence	14.62 ± 5.81
Existential intelligence	19.41 ± 5.11

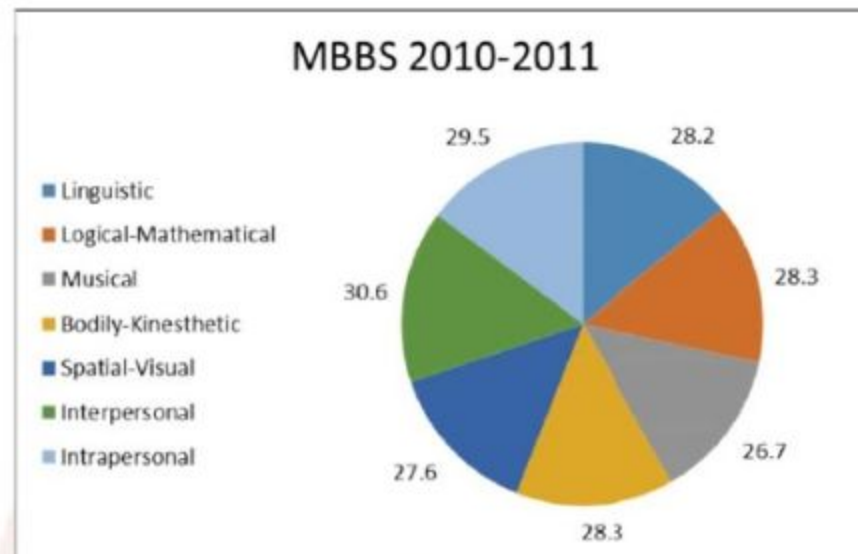
*All data are presented as Mean ± standard deviation

Dominant Multiple Intelligences among Students of Medical and Health Sciences

- The Questionnaire based on Howard Gardner's MI models was administered to first year students of Medical and Health Sciences University of the years 2010-2011 and 2011-2012 and was statistically analyzed.

The European conference on education 2014

AVERAGE SCORE IN EACH OF THE SEVEN DOMAINS OF Multiple INTELLIGENCE



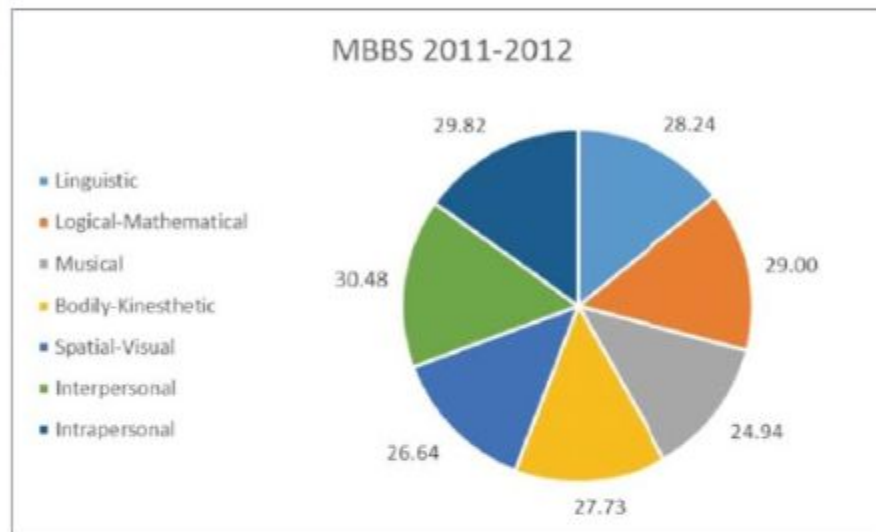


Figure 3

Learning with M I

- Adult learner
 - the same basic guidelines apply
 - seeking better ways of pursuing self-study on any subject of interest

Whatever you are teaching or learning, see how you might connect it with Devise some technology learning tasks that use the following intelligencies:

Learning with M I

Devise some learning tasks that use the following intelligencies:

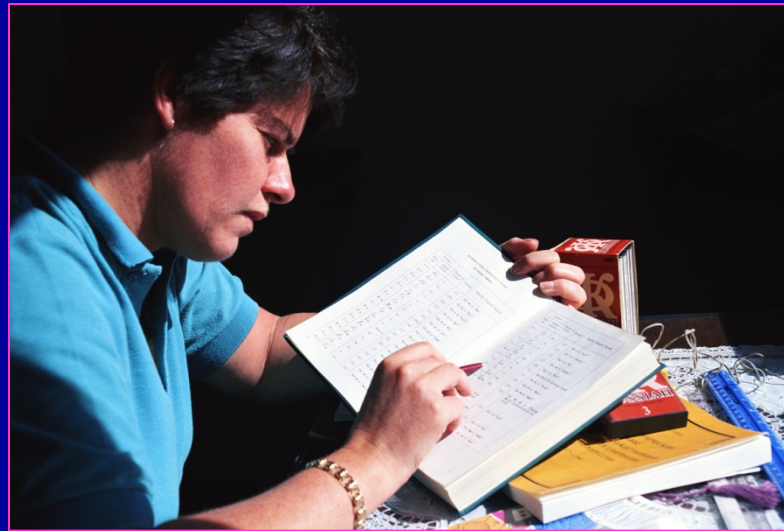
1. Verbal-linguistic
2. Logical-mathematical
3. Musical- rhythmic
4. Bodily-kinesthetic
5. Visual-spatial
6. Interpersonal
7. Intrapersonal
8. Natrualist

- don't have to teach or learn something in all eight ways
- just see what the possibilities are
- and then decide which particular pathways interest you the most effective teaching or learning tools.

- To get started
 - put the topic of whatever you're interested in teaching or learning about in the center of a blank sheet of paper
 - draw eight straight lines or “spokes” radiating out from this topic.
 - Label each line with a different intelligence.
 - Then start brainstorming ideas for teaching or learning that topic
 - write down ideas next to each intelligence

Knowing your learning style, both your strengths and your weaknesses, can help you study more effectively.

See it!

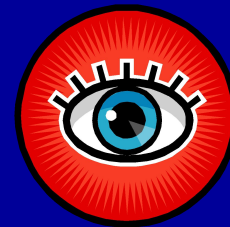


Hear it!

Experience it!

Build Strengths across the Learning Styles

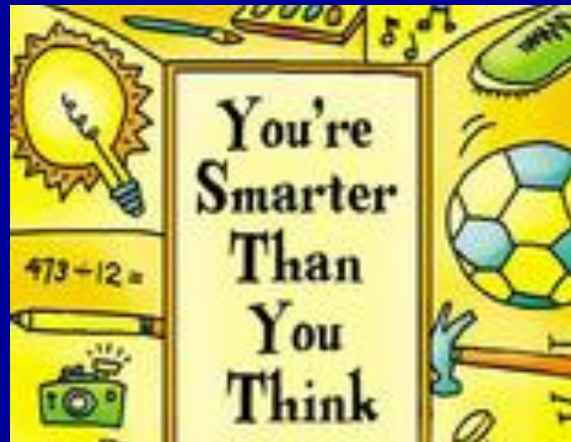
- Make the best use of your learning style.
- Work harder in skills that don't come easily to you.
- Be flexible and adaptable, try new things and new ways.
- Keep growing! Don't be easily satisfied!



Take Home Message

- Knows yourself first
- Choose identifiably distinctive way to learn or teach
- 9 different Multiple Intelligences

- You're Smarter Than You Think



References

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Thank
you!

