

ALL CHILDREN LEARN DIFFERENTLY

**LEARN HOW TO UNDERSTAND
THE ACADEMIC STRENGTHS
AND WEAKNESSES OF YOUR
CHILD**

Education 1500 – Late 1800s

- **Wealthy / tutors**
- **Church leaders, priests, monks**
- **One-room school house**



Mid 19th Century

- **Mass public schooling**



- **Industrial Revolution**



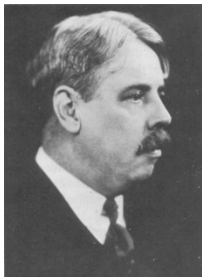
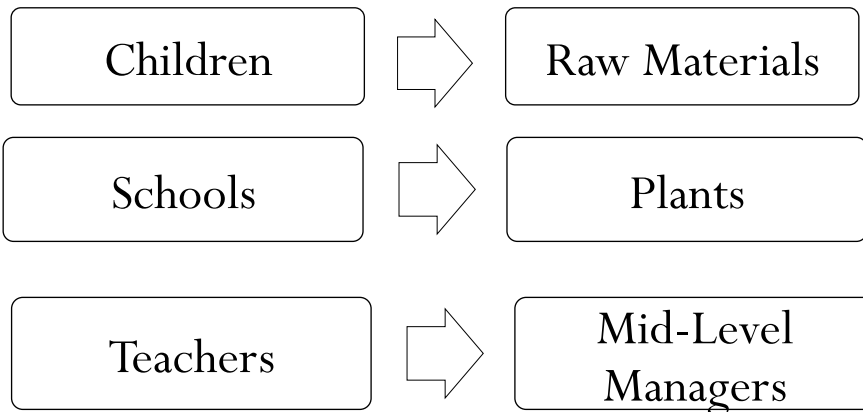
The Cornerstones of Education

- *The School as a Factory*
- *The Child as a Blank Slate*

Though obsolete, this model still has a profound impact.

Education and the Cult of Efficiency

by Raymond E. Callahan



Edward Lee Thorndike

• Professor of Psychology, Columbia University's Teachers College

- Foremost teacher educator
- Viewed the teacher as the major force in educating a child
- Teachers' task to change the child
- Drilled to form mental bonds
- Children could not transfer information from one context to another

EDUCATORS OF THE EARLY 20TH CENTURY

- **ONE SIZE FITS ALL**

Constructivists

- **Viewed child as constructing knowledge rather than taking in knowledge as an empty vessel**
- **Constructivists include Dewey, Piaget, Bruner and Montessori**



The basis of the reform of education and society, which is a necessity of our times, must be built upon ... scientific study.

~ Maria Montessori (1949/1974, p. 12, italics in original)

4 Areas in which Traditional Education Differed with Montessori

Montessori Differences:

Emphasis on Intellectual Development

Sensory Training

Sensitive Periods of Growth

Spontaneous Interest in Learning



Contemporary Education

- ◆ In 2008 Clayton M. Christensen wrote *Disrupting Class*. How disruptive innovation will change the way the world learns,
- ◆ Christensen is a Professor of Business, Administration at Harvard Business School,
- ◆ Widely regarded as one of the world's foremost experts on innovation and growth

Contemporary Education

“For America to stay competitive—academically, economically, and technologically—we need to rethink our understanding of intelligence, reevaluate our educational system, and reinvigorate our commitment to learning.”

Clayton M. Christensen
Disrupting Class

Contemporary Education

- ◆ **“The primary job or fundamental driver among every student is to feel successful, and all students are motivated to do that.”**
- ◆ **“Schools as currently constructed do not nail this job...”**

Clayton M. Christensen
Disrupting Class
2008

Contemporary Education

“Christensen, Horn and Johnson argue that the next round of innovation in school reform will involve learning software. The question is whether the next innovation, truly individualized instruction, will occur inside or outside public education.”

Kathleen McCartney, Dean
Harvard Graduate School of Education

MONTESSORI EDUCATIONAL METHOD

- **OVER 100 YEARS AGO MONTESSORI DEvised METHODS FOR INDIVIDUALIZING EDUCATION FOR STUDENTS REALIZING THE UNIQUE DIFFERENCE IN HUMAN BEINGS**

WHAT GAVE MONTESSORI THE ABILITY TO CREATE THIS NEW METHOD?

She developed a system from a principle, rather than applying principles to an already existing system.

MONTESSORI METHOD

- **MONTESSORI UNDERSTOOD HOW WE LEARN WITHOUT ALL THE MODERN IMAGING**
- **SHE OBSERVED IN THE SCIENTIFIC MANNER AND CREATED A UNIQUE METHOD**
- **MODERN DAY RESEARCH VALIDATES HER WORK**

Eight Principles of Montessori Education

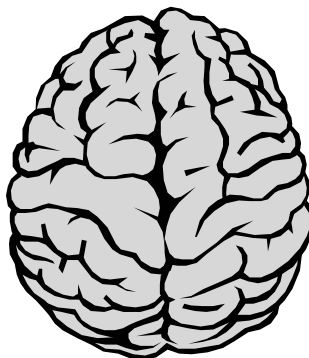
- 1. That movement & cognition are closely entwined, & movement can enhance thinking & learning;**
- 2. That learning & well-being are improved when people have a sense of control over their lives;**
- 3. That people learn better when they are interested in what they are learning;**
- 4. That tying extrinsic reward to an activity, like money for reading or high grades for tests, negatively impacts motivation to engage in that activity when the reward is withdrawn;**

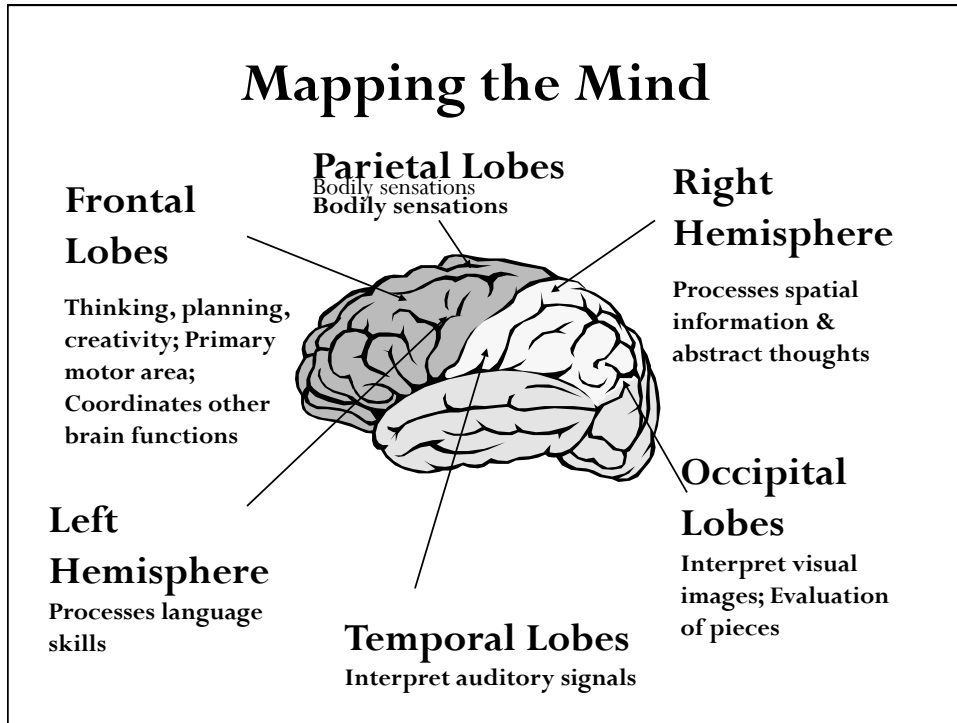
Eight Principles - continued

- 5. That collaborative arrangements can be very conducive to learning;**
- 6. That learning situated in meaningful contexts is often deeper & richer than learning in abstract contexts;**
- 7. That particular forms of adult interaction is associated with more optimal child outcomes; and**
- 8. That order in the environment is beneficial to children.**

Your Brain has . . .


- At least 100 billion nerve cells (**neurons**) in your brain.
- Neurons which make between **5,000 & 50,000 contacts** with other neurons.
- One million billion (**one quadrillion**) **connections** between neurons in the cortex.








NEUROTRANSMITTERS -


Play a vital role in key bodily function. . .

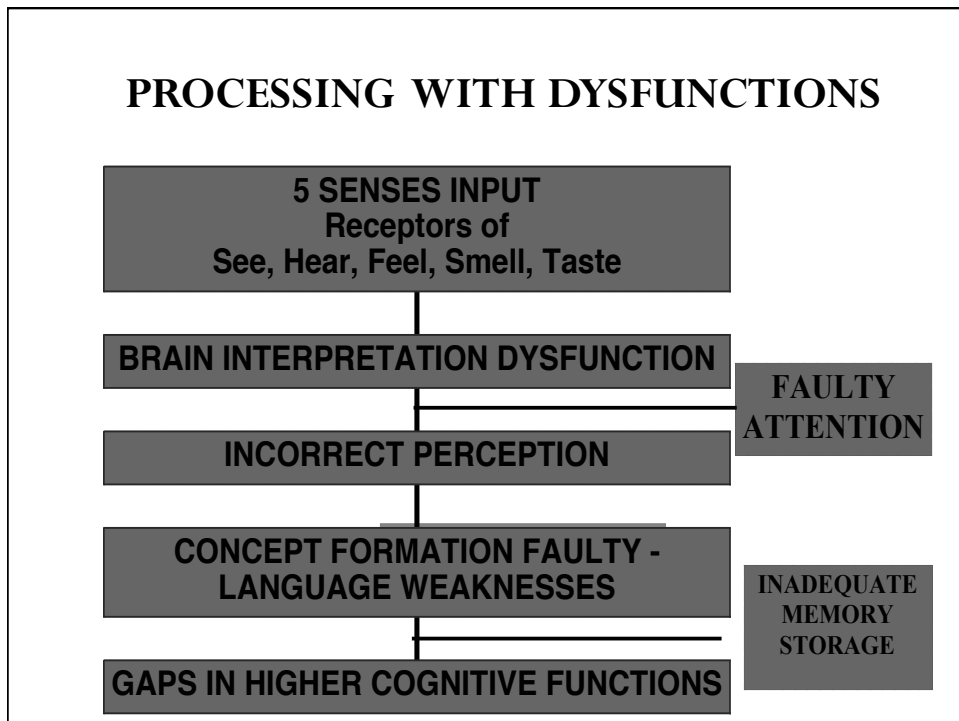
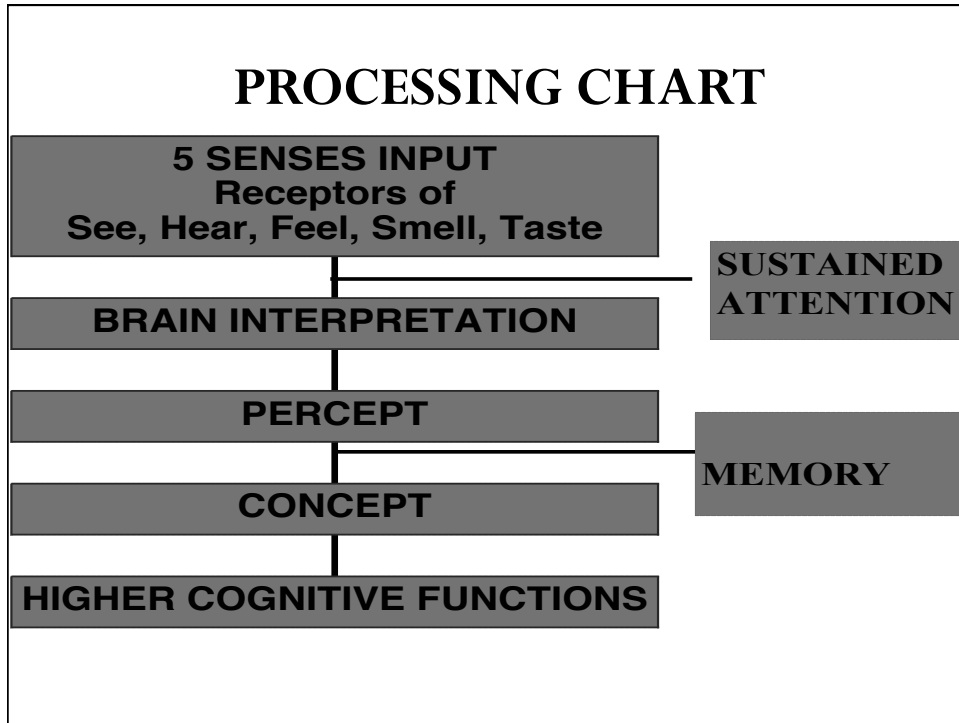
 **Acetylcholine** - widespread in the brain - involved in muscle action, learning & memory

Dopamine - plays major role in regulation of movements & emotions 

 **Norepinephrine** - involved in reward, mood regulation, arousal, activation fight/flight behavior

Serotonin - regulates body temperature, pain perception, onset of sleep 

 **Endorphins (opioids)** - minimize pain, produce feelings of pleasure



PROCESSING

- ◆ **ALL HUMANS MAKE PROCESSING ERRORS**
- ◆ **OCCASSIONALLY NOT A DIFFICULTY**
- ◆ **WHEN PROCESSING ERRORS ARE FREQUENT IT AFFECTS THE LEARNING IN WHICH THE PROCESSING ERRORS ARE MADE**

PROCESSING

- ◆ **VISUAL DISCRIMINATION**
- ◆ **VISUAL MEMORY**
- ◆ **AUDITORY DISCRIMINATION**
- ◆ **AUDITORY MEMORY**
- ◆ **VISUAL MOTOR**

EXAMPLES:

- ◆ **DIFFICULTY LEARNING TO DECODE IN READING/ SPELLING**
- ◆ **UNDERLYING DIFFICULTY IS PRONOLOGICAL PROCESSING**
- ◆ **AND PROCESSING SPEED**

EXAMPLES:

- ◆ **DIFFICULTY IN MATH**
- ◆ **PROCESSING ERRORS IS PERCEIVING NUMERALS, PATTERNS, AND FUNCTIONS**

EXAMPLES:

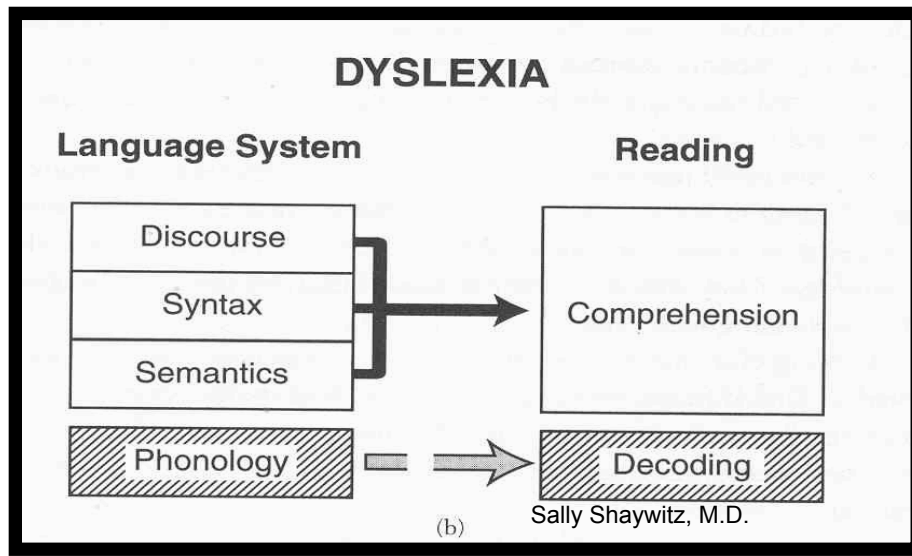
◆ DIFFICULTIES IN ORAL LANGUAGE DEVELOPMENT

◆ LANGUAGE PROCESSING OF BRINGING MEANING TO WORDS

◆ MAY BE DELAYED OR DISORDERED

◆ LEADS TO DIFFICULTY IN READING COMPREHENSION

In dyslexic children there is a glitch within the language system.



Related Disorders refers to learning differences in reading comprehension, attention, math, coordination, social skills and oral language disorders.

**Attention Deficit /
Hyperactivity
Disorder (AD/HD)**

◆ADHD refers to a family of chronic neurobiological disorders that interfere with people's capacity to attend to tasks, regulate activity, and inhibit behavior in ways appropriate to their age and circumstances.

AD/HD Individuals Benefit From:

- **Appropriate amount of sleep**
- **Eating a well balanced diet**
- **Exercise**
- **Prayer or Meditation**
- **Medication (if needed)**

Dr. Edward Hallowell
Driven to Distraction

Montessori Applied to Children at Risk

A method which provides for:

- individualization of instruction through the child's interaction with the didactic materials proceeding at his own rate for mastery

Montessori Applied to Children at Risk

- ✓ Specific procedures / techniques for training attention
- ✓ A classroom structure, clear in limits and privileges, which assists the child with faulty inhibition control to develop those skills

Montessori Applied to Children at Risk

- ✓ An emphasis on work organization which gives a child a model for learning how to set up and go about work tasks, the result of which can be a lifelong habit of investigation

Montessori Applied to Children at Risk

- ✓ **Manipulative materials** which provide the child with multisensory perceptions which help concretize abstract concepts

Montessori Applied to Children at Risk

- ✓ Specific techniques for increasing **gross motor skill** development, eye-hand coordination and fine motor skill facility

Montessori Applied to Children at Risk

- ✓ A concentration on the specific labels for people, objects, and ideas and their attributes and functions that foster **oral language development**

Montessori Applied to Children at Risk

- ✓ Presentations of **academics in small sequential steps** with scientifically researched materials to further skill development in language, math, geography, history, physical and biological sciences, art and music

Montessori Applied to Children at Risk

- ✓ An environment of encouragement to try, a de-emphasis of failure, which encourages the child's desire for independence, an emphasis on respecting the teacher and classmates that fosters consideration for others

The Child Who Learns Differently Requires:

- Teacher is present in their learning environment for greater time periods
- Direct assistance on attention, focus, & concentration
- Structure for behavior
- Guidance in selecting & performing tasks
- Specific & direct oral language development
- Direct teaching of language and/or math symbols
- Pre-writing & writing practice with a multi-sensorial technique
- Language presentations modified with the techniques or programs for children with specific reading disabilities

Self-Concept Formation

- ◆ **The child with average learning skills has more positive than negative experiences both before entering school and after entering school**
- ◆ **This builds resistance to anxiety**
- ◆ **Establishes a strong sense of self worth**

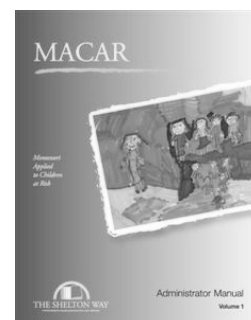
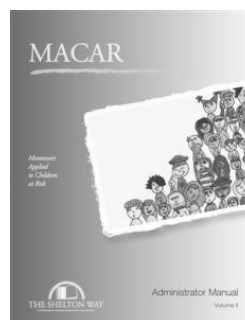
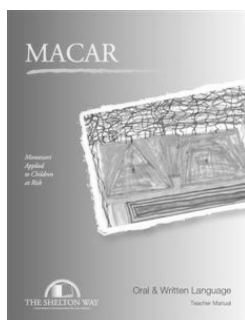
SELF CONCEPT FORMATION

- ◆ **The child with learning or adjustment difficulties has more negative than positive experiences, *especially* after entering school**
- ◆ **This exacerbates feelings of anxiety**
- ◆ **Self-concept is negatively affected**
- ◆ **Negative behaviors develop**

A vicious circle of negative behavior is set into motion

- Adults must intervene to stop the cycle
- The possibility of more positive experiences must be increased
 - Improve academic skills
 - Direct teach social skills/coping strategies
 - Provide success experiences in and out of the academic setting

For further information about the MACAR Course and materials, please visit the Shelton School booth at the AMS Conference.



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