How Are We Supporting Our Teachers And Our Students With Special Needs In The Montessori Classroom?

June Shelton School & Evaluation Center

- Founded April 2, 1976
- Students with learning differences preschool through grade twelve
- Comprehensive curriculum with strong academic orientation
- Supportive environment, stressing multisensory learning techniques
- Accredited by Independent Schools Association of the Southwest (ISAS)
- Member of Southern Association of Independent Schools (SAIS)

The Shelton Way
What Is A Language Learning Difference?

Definition of Language Learning Differences

A language-learning different child shall be defined as a child with:

- average or above-average intelligence
- adequate vision and hearing
- without primary emotional disturbance
- who has failed or is at high risk to fail when exposed to school experiences using conventional educational techniques.

Definition of Language Learning Differences

Language-learning differences are the result of auditory and visual processing dysfunction and include:

- the specific language disorder, dyslexia,
- and the related disorders of ADHD,
- specific math disability,
- specific written expression disability,
- specific oral language disorder, and
- developmental motor disorder.
**Dyslexia Definition Adopted by National Institutes of Health**

- One of several distinct learning disabilities;
- Specific language-based disorder of constitutional origin characterized by single word decoding;
- Reflects insufficient phonological processing abilities;
- Difficulties in single word decoding - unexpected in relation to age & other cognitive & academic abilities.

**Dyslexia - NIH Definition Cont.**

- Not the result of generalized developmental disability or sensory impairment;
- Manifested by variable difficulty with different forms of language, including in addition to problems reading, conspicuous problem with acquiring proficiency in writing and spelling.

**Related Disorders**

Refers to learning difficulty in:
- Oral Language Disorder (Dysphasia / Aphasia);
- Reading Comprehension Disorder;
- Attention Deficit Hyperactive Disorder (ADHD);
- Math Disorder (Dyscalculia);
- Coordination Disorder;
- Social Skills Disorder (Pragmatic Language Impairment).
PROCESSING CHART

5 SENSES INPUT
See Hear Feel Smell & Taste

Brain Interpretation

Percept

Concept

Higher Cognitive Functions

Sustained Attention

Memory

PROCESSING WITH DYSFUNCTIONS

5 SENSES INPUT
See Hear Feel Smell & Taste

Brain Interpretation Dysfunction

Incorrect Perception

Concept Formation Faulty – Language Weakness

Gaps in Higher Cognitive Functions

Faulty Attention

Inadequate Memory

Why Do We Need To Understand The Brain And How It Processes?
Dr. Gordon Sherman

“While no two brains are alike, the brains of people with dyslexia are distinctively different compared to those without dyslexia.”
Neural Migration

- Occurs before the 6th month of gestation
- A genetic code sends the signal to migrate
- In non-impaired learning brains the neurons do not reach the first layer of cerebral cortex—the language center of the brain

Dr. Gordon Sherman

Additional Cortex Difference
Symmetry

Dr. Gordon Sherman

Dr. Gordon Sherman
Two Neural Pathways

- The more skilled the reader, the more they activate this region

Word Form Area Occipito-Temporal
- The more skilled the reader, the more they activate this region

A Neural Signature for Dyslexia
- Under activation of Neural Systems in the Back of the Brain
In dyslexic children there is a glitch within the language system.

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.

Attention Deficit Hyperactivity Disorder (ADHD) DSM 314.01

Essential features
- Developmentally inappropriate degrees of
  - inattention,
  - impulsiveness,
  - hyperactivity.
Neurotransmitters . . .

- 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

ADHD

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

Assessment

- Parent Questions
- Teacher Questions
- Mental Ability
- Perceptual Ability
- Pre-academic / academic skills
- Behavioral Checklist
Patterns of Dyslexia & Related Disorders

Patterns of Learning Disorders
- Pattern 1 - Reading Disorder (Dyslexia)
- Pattern 2 - Related Disorder: Reading Comprehension Disorder
- Pattern 3 - Related Disorder: Attention Deficit / Hyperactivity Disorder

Patterns of Learning Disorders
- Pattern 4 - Related Disorder: Math Disorder (Dyscalculia)
- Pattern 5 - Related Disorder: Motor Incoordination
- Pattern 6 - Related Disorder: Oral Language Disorder (Dysphasia)
Patterns of Learning Disorders

- Pattern 7 - Related Disorder: Social Interaction
- Pattern 8 - Related Disorder: Mood/Anxiety
- Pattern 9 - At Risk for Learning Disorders
  - Weakness in Coordination
  - Weakness in Language
  - Weakness in Attention
  - Weakness in Perception

How Do We Treat Learning Differences?

Treatment
Remediation + Montessori
- Organization/Study Skills
- MSL Reading Approaches - Language Therapy
- Multisensory Teaching
- Cooperative Learning
- More Individualization
Treatment

Accommodations:
• Untimed Tests / Extended time on written assignments
• Assistive Technology - computers, books on tape, tape recorders

Treatment

Non-medication
• Direct teaching of attention skills
• Cognitive Strategies
• Exercise and Diet

Medication
• Stimulant Medications - Ritalin, Dexadrine, Adderall, Concerta
• New Class of Medication - Strattera, a selective norepinephrine reuptake inhibitor
• Mood Medications - Paxil, Prozac, Wellbutrin, Zoloft

Positive Effects

• Improved sustained attention
• Improved impulsivity
• Improved learning due to increased memory
• Better organization, less scatter
• Less risk of illegal drug use
• Less side effects of anxiety, depression, suicide
What Can We Observe In Preschool Children That Would Alert Us To At Risk Characteristics?

If you would identify children who are high risk for academic learning tasks, with the goal of providing early intervention, evaluate:

- Coordination
- Language
- Attention
- Perception

Coordination
- Gross
- Fine
- Life Skills
Oral Language
- Receptive (understanding)
- Expressive (producing)
  - Speech (articulation)
  - Morphology (roots / affixes)
  - Syntax (order / grammar)
  - Semantics (meaning)
  - Voice (quality)
  - Fluency (smooth production)

Written Language
- Pre-reading
- Reading
- Pre-writing
- Writing
- Composition

Attention
- Motor Skills
- Practical Life
- Sensorial
- Silence Game
Perceptual

- Sensorial
- Social Skills
- Pre-Academic

Varying Exceptionalities

Learning Differences

- Dyslexia
- ADHD
- Oral Language Disorders
Learning Differences

- 15-20% of the population

Dyslexia

- Reading Decoding
- Spelling
- Written Expression

ADHD

- Inattentive Type
- Hyperactive Type
- Combined Type
ADHD

- 5-7% of the population

Oral Language Disorder

- Inability to associate meanings to words

Learning Differences

DIFFICULTIES RELATED TO LD
- Motor Delays or Disorders
- Speech-Language Delays/Disorders
- Social Skill Deficits
- Organization and Study Skills Deficits
- Dysgraphia (handwriting incoordination)
**Intellectual Deficit**

- Generalized disorder appearing before adulthood characterized by significant impairment cognitive functioning and deficits in 2 or more adaptive behaviors.

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**Intellectual Disability**

- 2-3% of the population
- 75-90% Mild ID
- 25% genetic

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**Intellectual Disability**

- Delays in Language Development
- Deficits in memory skills
- Difficulty with social rules
- Difficulty with problem solving
- Delays in adaptive behavior
- Lack of social inhibitors
Intellectual Disability Types

- Syndromic Intellectual Disability: intellectual deficits are associated with medical and behavioral signs and symptoms
- Non Syndromic Intellectual Disability: intellectual deficits without other abnormalities (30-50%)

Intellectual Disability IQ Categories

- 50-69 Mild: not obvious in early years, can learn to read and do math to approximately the 9-12 year old level, can be trained to do a job and live independently
- 35-49 Moderate: apparent in infancy, can learn health and safety rules, live with parents or in a group home
- Below 35: Severe: needs help entire life

Intellectual Disability Causes

- Down Syndrome: Most frequent
- Velocarriofacial Syndrome
- Fetal Alcohol Syndrome
- Genetic Conditions
- Problems during pregnancy
- Problems during birth
- Exposure to certain diseases/toxins (meningitis, measles, lead)
- Iodine Deficiency
- Malnutrition
- Absence of Arcuate Fasciculus
Down Syndrome

- Down Syndrome is a genetic condition in which a person has 47 chromosomes instead of the usual 46.

Down Syndrome

- Discovered by Dr. John Langdon Down
- Dr. Jerome Lejeune: 3 copies of chromosome 21/not 2

Down Syndrome

- Cause: unknown
- 80% born to mothers under 35; chances increase with age of the mother
- 1 in 691 live births/1 in 1087 in 1990
- Population in the US estimated at over 400,000
Down Syndrome

- 39.4% of DS-mild ID 50-75
- 1% Borderline 70-80

History of Terms

- Cretain – “still Christian” “still human”
- Amentia - difficulty in mental functioning early in life/Dementia-later
- Idiot-mental age 2 years or less(profound)
- Imbecile-less extreme-moderate to severe
- Mongolism-medical term for Down Syndrome-removed in 1960

History of Terms

- Educable - 50-75
- Trainable - below 50
- Retarded - Latin-to make slow, delay
Autism

- Autism Spectrum Disorder is a developmental disorder that appears in the first 3 years of life and affects the brain’s normal development of social and communication skills.

- Associated with motor, attention sleep and gastrointestinal difficulties/in some with ID
- 1 in 68 on Autism Spectrum
- 4-5 times more likely in males
- Over 2 million in the US

Autistic Savant

- An Autistic person with unusual abilities in a specific area of knowledge (math, 3 dimensional visual perception, computers)
Autism

- Caused by a combination of Autism risk genes and environmental factors influencing early brain development.

Montessori on Varying Exceptionalities

- Montessori stated that in a classroom of normal PS children, the knobbed cylinders were presented to 3 year olds and it was a favorite exercise. For the "retarded" child, she pointed out, that it was necessary to begin with simpler exercises, in which the stimuli was much more strongly contrasted and many other exercises would need to proceed this one.

Montessori for the Intellectual Disability

Maria Montessori stated that once she was able to present the cylinder blocks to the retarded child it was necessary to continually recall his attention.
Montessori for the LD Child

Montessori wrote:

"The difference in reaction between deficient and normal children in the presentation of didactic material made of graded stimuli, is plainly seen from the fact that the same didactic material used with deficiencies makes education possible, while with normal children it provokes autoeducation."

Maria Montessori The Montessori Method

What Does The Montessori Curriculum Give Us That Helps The At Risk Student?

Four Planes of Development

"Montessori education is geared to peaks and valleys of human formation." Dr. Montessori suggested we “divide education into planes and each of these should correspond to the phase the developing individual goes through".
The development of the “at risk” child is uneven. Some areas are developing typically; others are not. The sensitive periods are different. Since the development in the first 6 years is different, all other periods of development are affected.

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

**Individualization**
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

Attention

Classroom Structure
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

Work Organization

Manipulative materials which provide the child with multisensory perceptions which help concretize abstract concepts
Manipulative Materials

Montessori Applied to Children at Risk

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

Fine Motor Skill
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.

Oral Language Development Body

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.
Academics in Small Sequential Steps

Montessori Applied to Children at Risk

✓ Enhancement of Social Skills and Interpersonal Relationships

Choices
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.

Environment of Encouragement

What Else Does The Montessorian Need To Know To Help The At Risk Child?
Facilitating Learning For The At Risk Child

- Tasks reduced to smaller segments
- Segments based on perceptual assessment / observation of perceptual motor development
- Show/feel similarities, & differences (sensorial)
- Teach transitions (abacus)
- Teach patterns (hundreds board)

Teach Transitions

Teach Patterns
Sequential English Education (SEE)

SEE is a Multisensory Structured Language Education program.

SEE combined with Montessori language instruction teaches reading, spelling, handwriting, written expression and includes literacy exercises.

The Shelton MSL Training Course in SEE is accredited by IMSLEC and IDA

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SEE

The lesson includes these activities:
- Introduction of each sound in a structural linguistic multisensory approach - a, t, p, h, c, n, l, b, f, s, g, m, j, r, v, d, i, k, w, z, th, u, sh, e, y, ch, q, o, x
- Decoding with moveable alphabet by word family-patterns limited, one vowel at a time
- Moveable Alphabet reduced in difficulty for word building

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SEE

- Patterns taught from simple to complex - CVC words with consonants, consonant digraphs, consonant blends, long vowels with the final e pattern, other long vowel combinations, vowels with l/r, multi syllable words, morphology, syntax, semantics

The Shelton MSL Training Course in SEE is accredited by IMSLEC and IDA
Facilitating Learning For The At Risk Child

- Oral language emphasis
- Use short repeated phrases
- Use rhythm
- Use multisensory reinforcement for memorization

- Organization must be taught
  - Use of space-control charts/placement guides
  - Directionality - left to right carefully stressed/tactile & kinesthetic reinforcement
  - Sequence - first, second, third

- Attention - equal responsibility of student & teacher

The At Risk Child Requires:

- Teacher is present in their learning environment for greater time periods
The At Risk Child Requires:

- Direct assistance on attention, focus, and concentration

The At Risk Child Requires:

- Structure for behavior

The At Risk Child Requires:

- Guidance in selecting and performing tasks
The At Risk Child Requires:

- Perceptual discrimination from three dimensions to paper and pencil

The At Risk Child Requires:

- Specific and direct oral language development
The At Risk Child Requires:
• Direct teaching of language and/or math symbols

The At Risk Child Requires:
• Pre-writing and writing practice with a multisensorial technique

Pre-Writing and Writing
The At Risk Child Requires:
- Language presentations modified with the techniques or programs for children with specific reading disabilities

Facilitating Learning For The At Risk Child
Written Language Development

SUMMARY & CONCLUSIONS
The At Risk Child Requires:
- 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
A Balance in Education Discovery Learning & Direct Instruction

Results of Lack of Early Intervention

- Untreated disorders of articulation become ingrained habits
- A lack of vocabulary becomes more severe communication disorders

Results of Lack of Early Intervention

- Visual/auditory processing disorders result in mild to severe written language disorders (reading, writing, spelling)
- Non Verbal/verbal communication deficits often causes difficulties with social skills
• If a parent or teacher waits for the child with a language disorder to spontaneously develop the skills for which he does not have the discrimination & integration abilities, it means the child struggles with confusion & frustration.

Education Must Be Prescriptive

Many approaches/programs could work with most children to some degree, but it is more effective if we match the program to the child and his individual profile of strengths/weaknesses in the assimilation of language and learning.

MATCH

J. McVicker Hunt has written that Montessori has come the closest to solving the problem of “match” in education. (Hunt 1968). He explains the “match” concept as placing the level of presentation to the child at the child’s developmental and skill level for optimal learning and success. This problem of “match” is critical to teaching the at risk child.
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
Montessori Applied To Children At Risk For Learning Differences

MACAR
Shelton School in Dallas, Texas
JULY 6-14, 2016
(no class on Sunday)

MACAR is designed to assist the Montessori teacher to serve students with learning differences in the regular classroom.

Materials provided electronically and include:

- Administrative Manual
- Oral Language/Written Language
- Practical Life
- Choices
- Sensorial
- Perceptual Motor Skills
- Math
- Oral Language/Written Language
- Perceptual Motor Skills

www.shelton.org/MACAR

For further information about trainings and materials, please visit the Shelton website
www.shelton.org/training