

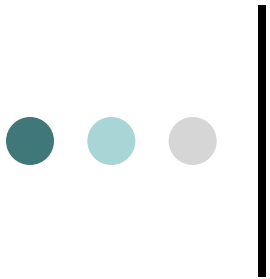


FROM  
BRAIN SCAN

TO

LESSON PLAN

by Drina Madden

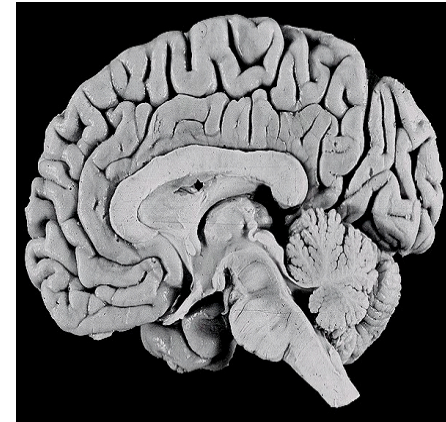
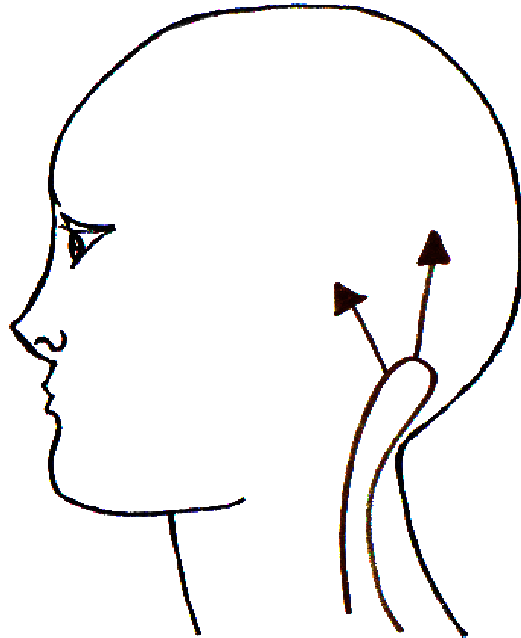


# The Working Brain

- **The Works**
- **Glitches**
- **Repairs**



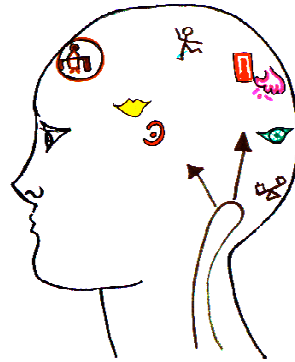
# The Works



**The "switch" of the brain (brain stem), wakes the brain up each morning.**



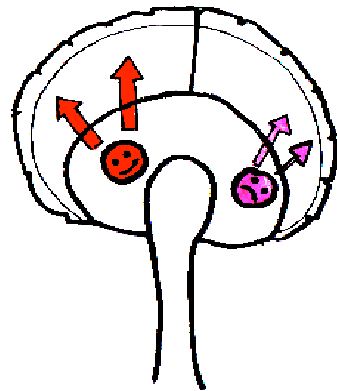
# The Works



Brain chemicals send electrical "wakeup" messages to the brain's many receiving, gathering, holding and sending stations.



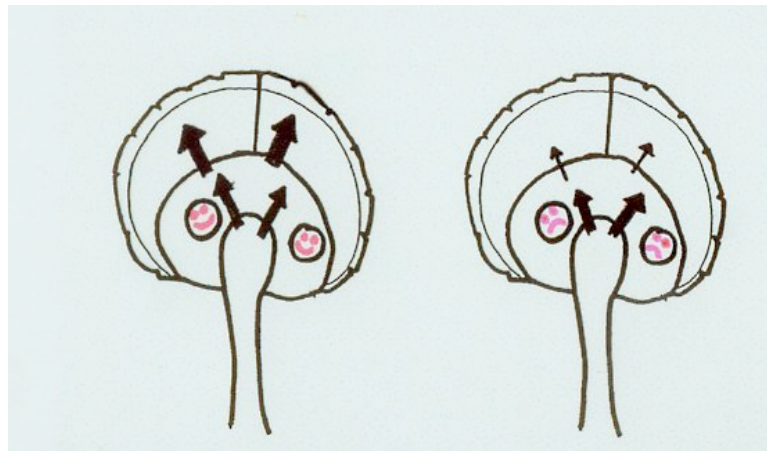
# The Works



Activation must go through the mood part of the brain before thoughts and actions can occur.

# The Works

A happy person can learn, play, interact.....better than a sad person-



because messages travel more easily.

# The Works



The brains of children are more "general" than adults. They need many varied experiences so visual, auditory, speech...areas may develop.



# The Works

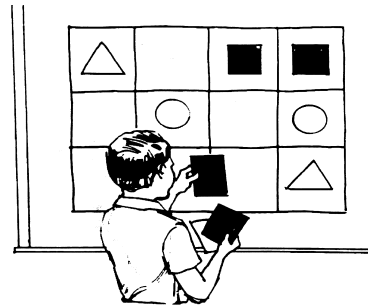
Children under 5 have less effective message carrying chemicals ( esp. dopamine) than adults.



They have more trouble focusing their attention.



# The Works



**With strong messages, a child can hear “square”, and say “square” when shown it tomorrow.**



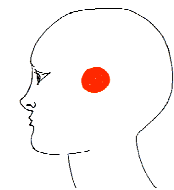
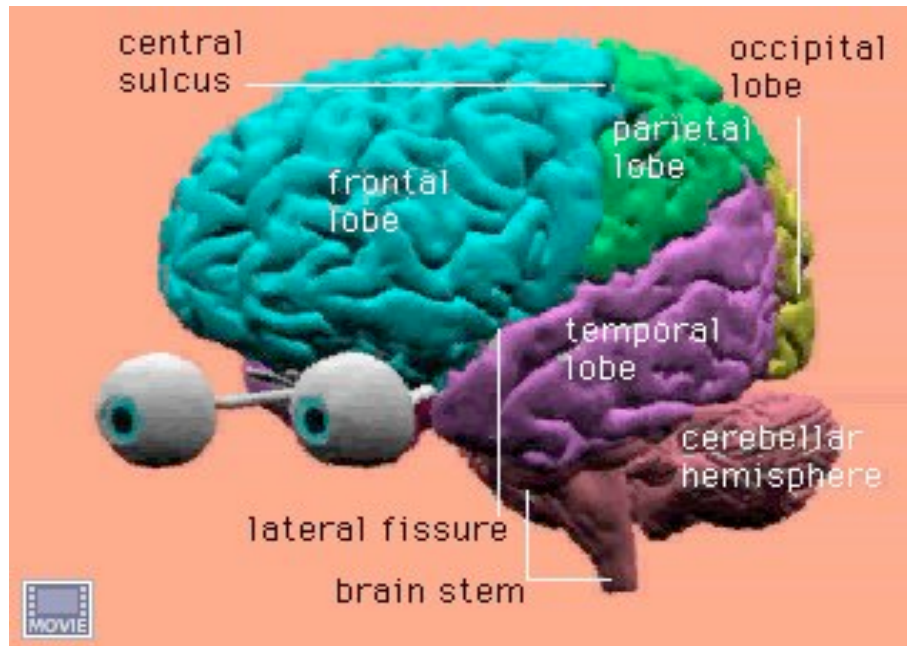
# The Works

Clear, repeated experiences help young children build memories.

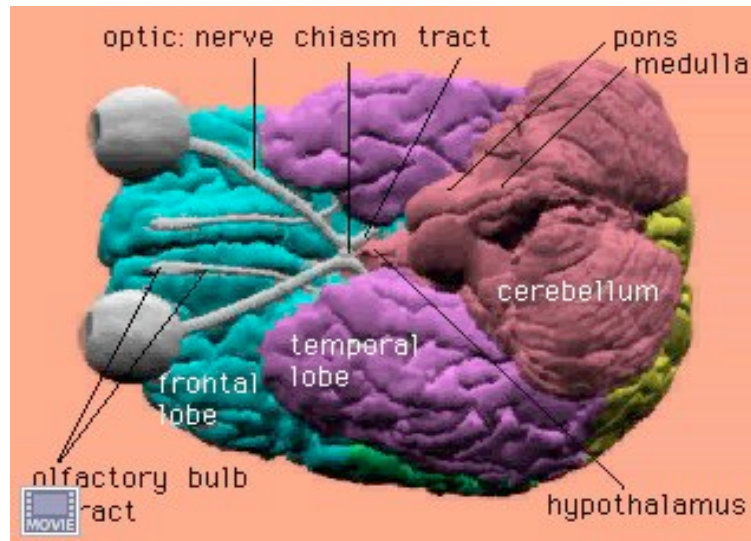


# The Works

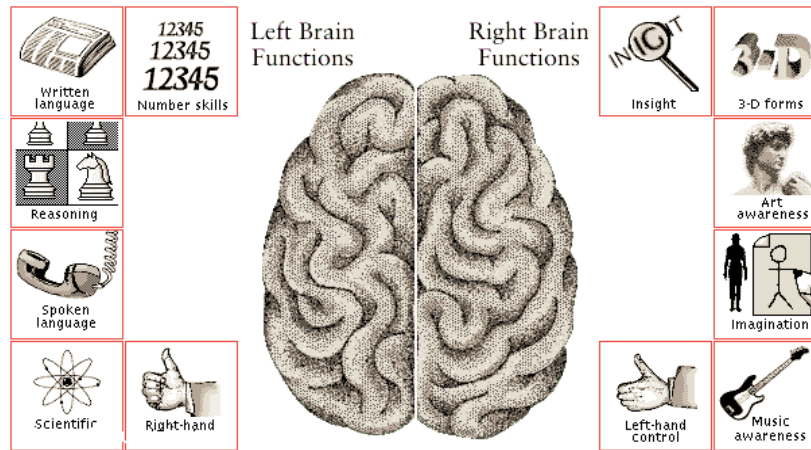
Motor, speech, touch, pressure temperature, and taste awareness develop.



# The Works

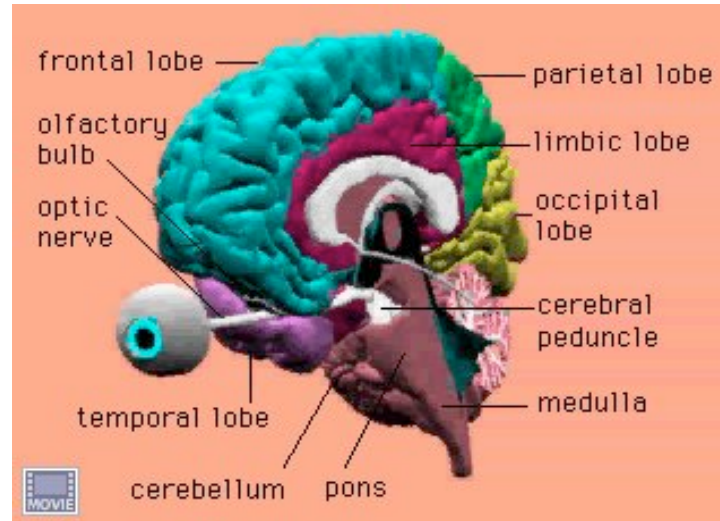


# The Works



The two sides of the brain begin sharing more memories.

# The Works



Visual, auditory, touch, smell, speech, pressure, taste, and mood experiences all begin sharing with each other.

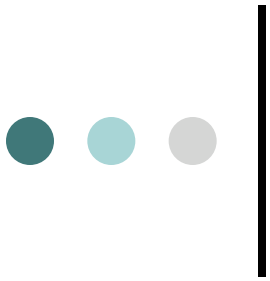


# The Works

.....if the child experiences many different things, feels safe and secure .....

.....and there are no

GLITCHES.



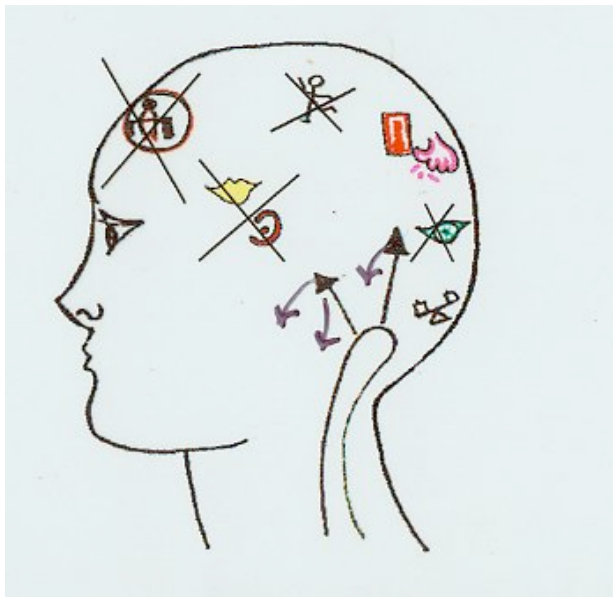
# Glitches

- **Chemical difficulties**
- **Electrical problems**
- **Brain formation**



# Glitches - Chemical Difficulties

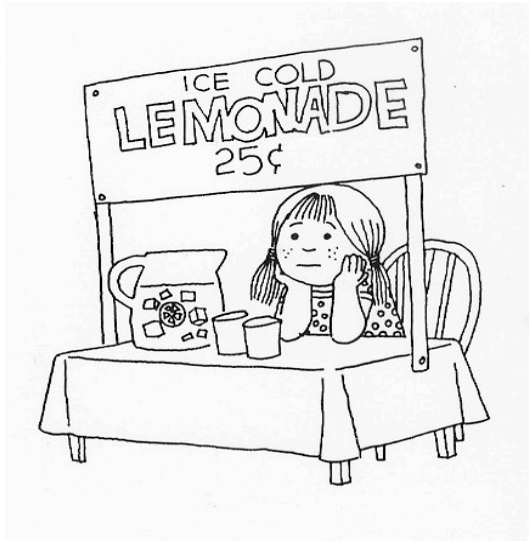
## Attention Disorders



- **Brain stem not activating well**
- **Brain chemicals are inefficient**

# Glitches - Chemical Difficulties

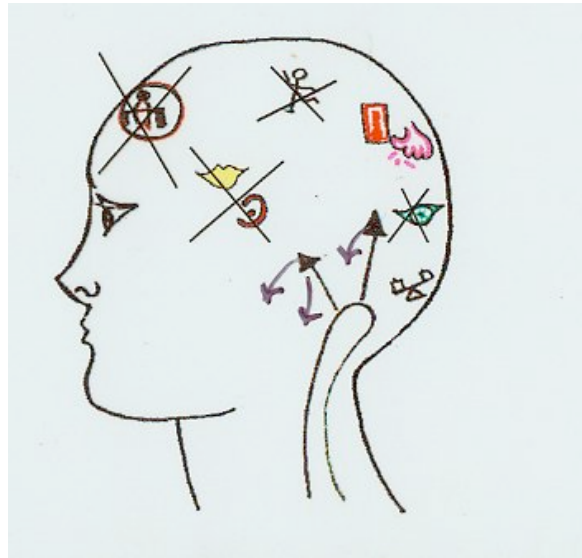
## Attention Disorders



- Messages are not strong enough
- Receivers can't receive. They lose interest.

# Glitches - Chemical Difficulties

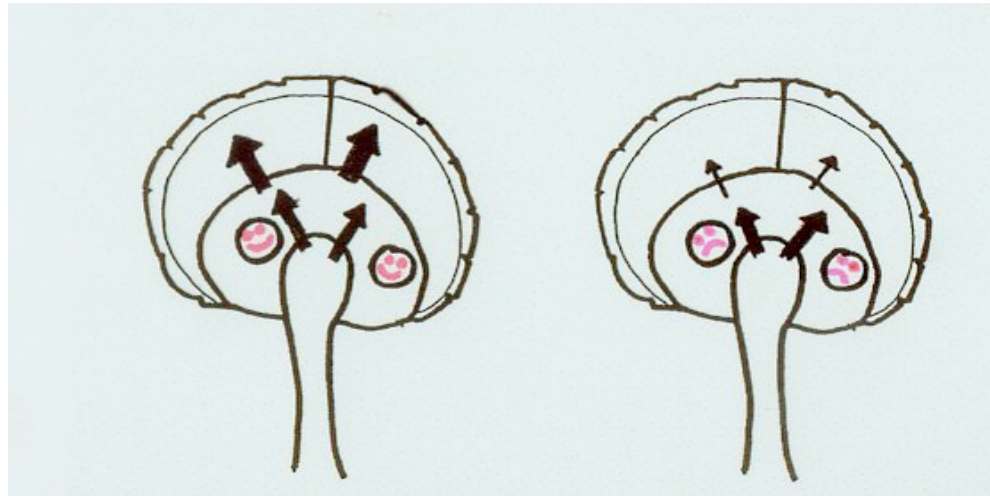
## Attention Disorders



- **Child or adult can't focus attention. Much information that comes in, leaks out before it can be fully stored.**

# Glitches - Chemical Difficulties

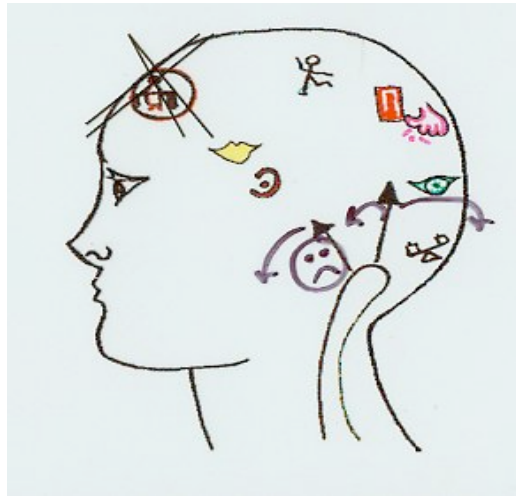
## Mood Disorders



- **Brain chemicals are inefficient**

# Glitches - Chemical Difficulties

## Mood Disorders

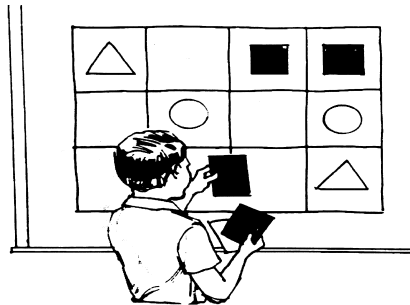


- **Messages are not strong enough to sustain mood**
- **Messages are not strong enough to activate higher brain**

# Glitches - Electrical Problems

## Seizure Disorders

- Remember - all brain messages are electrical



- “Square” heard and seen is sent, stored and the person can say “square” tomorrow.

# Glitches - Electrical Problems

## Seizure Disorders

- "Bad Electricity" (seizures) can scramble the stored messages.



- The person will not remember today what he knew yesterday

# Glitches - Electrical Problems

## Seizure Disorders

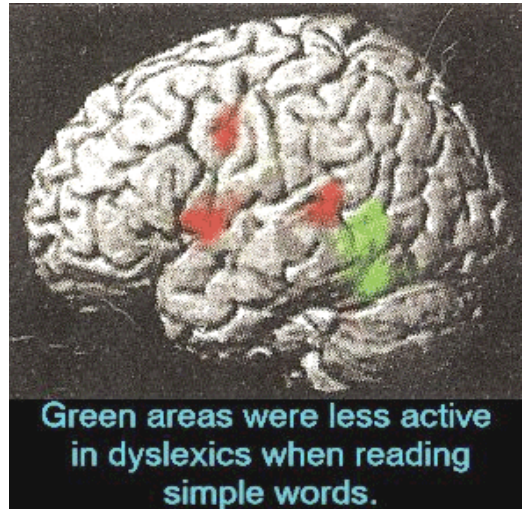


- **"Bad electricity" can change the chemicals in that area of the brain, damage cells and cause receivers to lose interest.**



# Glitches - Brain Formation

## Dyslexia



- Extra neurons that don't do anything

# Glitches - Brain Formation

## Dyslexia



- **Bulges that contain working neurons make sounds and symbols hard to locate**

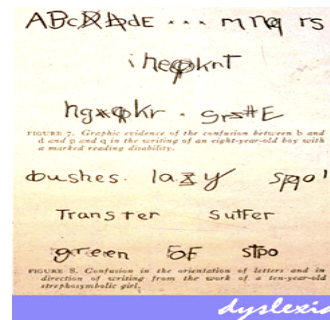
# Glitches - Brain Formation

## Dyslexia



- **Reading is slow and laborious.**

# Glitches - Brain Formation Dyslexia



- Some people have trouble noticing and then "recording" the symbols they see (dyseidetic).

# Glitches - Brain Formation

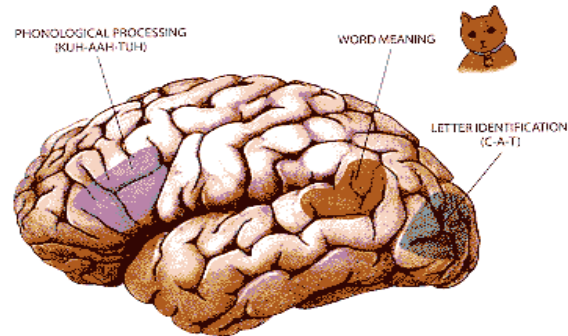
## Dyslexia



- Some people have trouble:
  - ◆ telling one sound from another
  - ◆ then storing them in memory (dysphonetic).

# Glitches - Brain Formation

## Dyslexia



- **Some people have trouble :**
  - ◆ **noticing sounds AND symbols**
  - ◆ **recording them (combined).**

# Glitches - Brain Formation

## Dyslexia



- **Some can record sounds AND symbols**
- **can't put them into whole words (mnestic or memory).**

# Glitches - Brain Formation

## Dyslexia

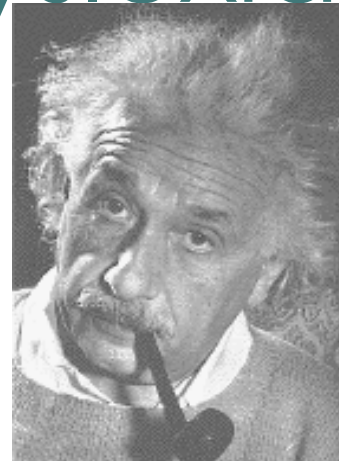


- Some people can record symbols, sounds and combine them
- Cannot bring the pieces together to understand what they have read (memory + synthesizing).



# Glitches - Brain Formation

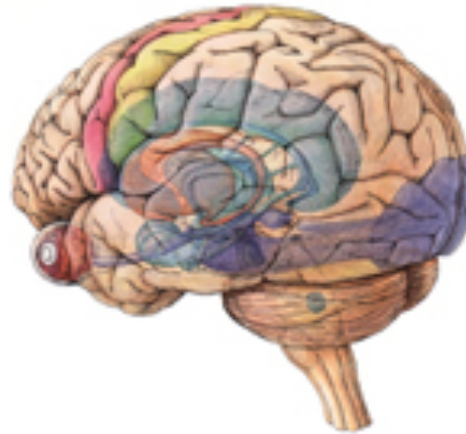
## Dyslexia



- They all need deep, repetitive sound/symbol connections and the **GIFT OF TIME**.
- Books on tape help, too.



# Glitches - Brain Formation Learning Disabilities



- **Certain brain areas are not well activated**

# Glitches - Brain Formation

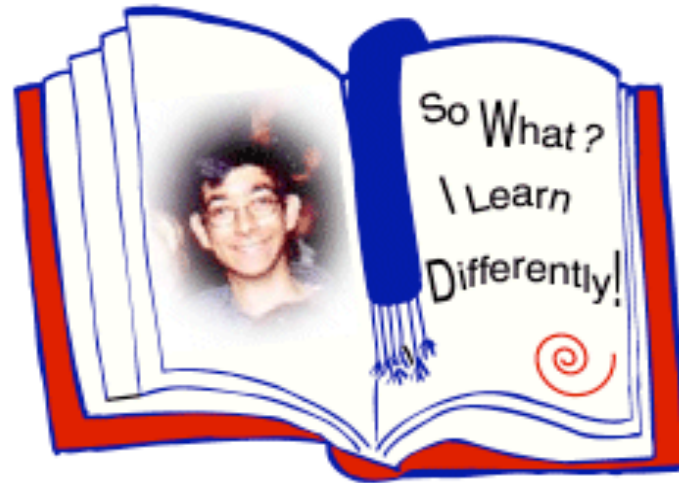
## Learning Disabilities



- **Certain brain areas do not have enough neurons.**

# Glitches - Brain Formation

## Learning Disabilities



- **Learning can be quite uneven - with great strengths and comparative weaknesses.**

# Glitches - Brain Formation

## Learning Disabilities



- Learning can be quite uneven - often varying greatly from day to day.



# Glitches - Brain Formation Learning Disabilities



The person is often perceived as a person who:

- ◆ is "lazy"
- ◆ "does the things well that he likes to do"
- ◆ should just "try harder"

# Glitches - Brain Formation Learning Disabilities



- **Many people with ADD also have Learning Disabilities**
- **Many with Learning Disabilities have ADD.**



# Glitches - Brain Formation Learning Disabilities

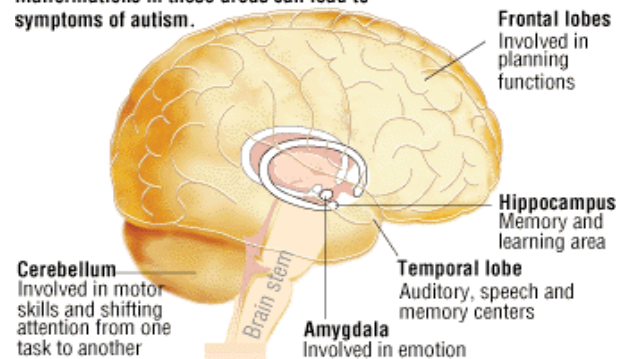
- **A person can have learning problems that disable him and still have standard test scores in the "average range".**
- **The law has drawn a line to determine the people with severe disabilities for whom tax dollars will support extra help.**
- **If a child does not meet the "legal" definition for learning disabilities, she may still have disabilities interfering with her learning.**



# Glitches - Brain Formation

## Autism/Pervasive Disorders

Many children with autism have anomalies in some of the brain structures shown below. Malformations in these areas can lead to symptoms of autism.



- Some brain areas are smaller than normal causing problems "gathering" sensory impressions

# Glitches - Brain Formation

## Autism/Pervasive Disorders

- **Chemicals are often inefficient**
  - ◆ **Affecting attention**
  - ◆ **Affecting mood**
  - ◆ **Affecting learning**





# Glitches - Brain Formation

## Autism/Pervasive Disorders

People often have trouble:

- Processing new information
- Scanning an area to focus on the important elements
- With pieces of information. Need the "whole" picture



Without  
autism

With  
autism

# Glitches - Brain Formation Autism/Pervasive Disorders

People often have trouble:

- Organizing ideas and getting to the "core"
- Remembering items in the correct sequence
- Judging the passage of time
- Their world is often "concrete" and literal





# Glitches - Brain Formation Autism/Pervasive Disorders

People often have trouble:



- **Processing auditory information**
- **Automatically understanding visual information**
- **Problem solving and adaptation are often difficult**
- **Controlling motor and verbal responses**

# Glitches - Brain Formation Autism/Pervasive Disorders

- **The world of people is often overwhelming because of :**
  - ◆ **speedy verbal plus auditory**
  - ◆ **plus abstract presentation**
  - ◆ **that they cannot process quickly enough**
  - ◆ **to respond in an appropriate manner**



# Repairs

## Brain Reorganization



- λ **Therapy can change the receivers and senders.**
- λ **Therapy/Exercise can help the person process.**

# Repairs

## Brain Reorganization



- **Attention can be activated through specific "attention getting" exercises.**



# Repairs

## Brain Reorganization

- **Memory can be enhanced through direct exercise**
  - ◆ **Auditory**
  - ◆ **Visual**
  - ◆ **Tactile**



# Repairs

## Brain Reorganization



- **Memory "gathering" or processing can be enhanced once attention and basic memory become stronger.**

● ● ● |

# Repairs

# Brain Reorganization



- **When mood is "open" all exercises and learning become more effective**



# Repairs

## Brain Reorganization

Then.....

- ◆ the organizing
- ◆ planning
- ◆ reasoning

parts of the brain can be

- ◆ better stimulated
- ◆ receive more complete images





# Repairs

## Medication - Attention

- **Chemicals work more effectively to stimulate the brain**

- ◆ **Ritalin**

- ◆ **Dexedrine**

- ◆ **Cylert**

- ◆ **Adderall**



# Repairs

## Medication - Mood

- **Mood is able to remain "open" allowing stronger, global brain connections**

- ◆ **Prozac**

- ◆ **Welbutrin**

- ◆ **Paxil**

- ◆ **Buspar**

- ◆ **Zoloft**

- ◆ **Effexir**



# Repairs

## Medication - Seizures

- **Anti-seizure medication can often stop the seizures allowing appropriate connections to be made.**

- ◆ **Depakote**

- ◆ **Tegretol**

- ◆ **Dilantin**



# Repairs

## Assistive Techniques – Attention

- **Limit distractions**
- **Devise an attention getting cue**





# Repairs

## Assistive Techniques - Attention

- **Repeat directions**
- **Keep lessons clear and simple**
- **Allow extra TIME for processing**
  - ◆ **Shorten assignments**
  - ◆ **Shorten tests**

# Repairs

## Assistive Techniques

### - Mood



*Solving the problem of dyslexia one mind at a time.*

- **Self esteem grows through success**
- **High self esteem helps open mood**

# Repairs

## Assistive Techniques - Mood



- **Feed the child's strengths**
- **Help him manage his weaknesses**

# Repairs

## Assistive Techniques - Dyslexia

- Repetitive multisensory phonemic instruction
  - ◆ Wilson approach
  - ◆ Orton approach

to strengthen  
connections



● ● ● | Repairs

# Assistive Techniques - Dyslexia



- **Visualizing techniques so the child learns to convert pieces into wholes**



# Repairs

## Assistive Techniques -

### Dyslexia

- **Teach how to use books on tape with note taking techniques**

- **Then .....**

- ◆ **the child can academically keep up with peers**

- ◆ **the child does not lose precious time unlocking and trying to remember all the pieces**



# Repairs

## Assistive Techniques

## Other Learning Disabilities

**Auditory input/output**

**Visual input/output**

**Visual input/Motor output**

**Reading- speed, accuracy,comprehension**

**Math**

**Spelling**

**Writing**



# Repairs

## Assistive Techniques - Pervasive Disorders

**Structure**

**Routine**

**Concrete**

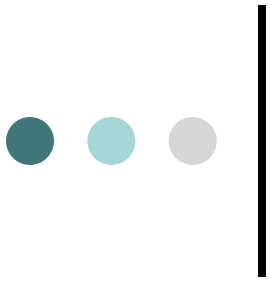
**Whole**

**Repetition**

**Visual schedules**

**Social teaching**





# Repairs Assistive Techniques

Clear, simple environment

Mood smoothers

Repetition

Manipulatives

Concrete presentation

Multisensory presentation

Visual plans

**Awareness of Learning Styles**



# Repairs Assistive Techniques

- Large print
- Tape recorders
- Computer for special software:
  - Eye Q
  - Motorvator
  - Brain Builder
  - Eye Spy
  - Inspiration
  - Co-Writer

**Alphasmart**

# Understand me



help me to be all that I can be