



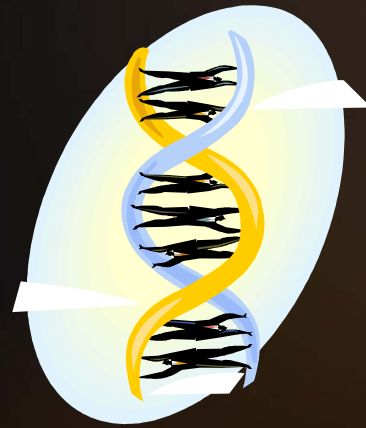
What role do
genetics
play

in the learning process?

The IQ of a child is related to the IQ of the parent.

- Scientists call this a concordance rate.
- Children have a concordance rate of about 50% with their parent for IQ.
- So if intelligence is related, it was natural to expect that research would find that learning disabilities are also related.

Scientific research supported the premise that...



- Genetics play a role in learning disabilities.
- However, this is a complex area to study since there is great variety in the number and types of disabilities.

Genetics



- While learning disabilities tend to run in families, their expression differs in the parent and in the child.
- Children who lack skills needed for reading, such as hearing the separate sounds of words, often have a parent with a related problem.

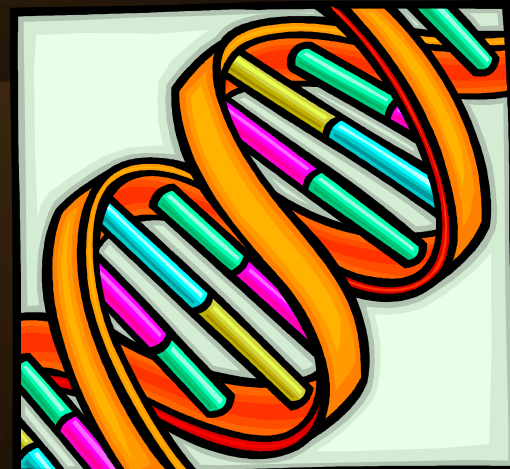
- The parent's learning disability may take a slightly different form in the child.
- A parent who has a writing disorder may have a child with an expressive language disorder.

Therefore...

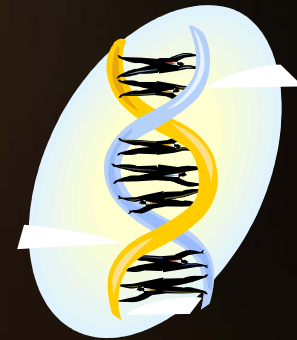


It is unlikely that specific learning disorders are inherited directly.

- More likely, what is inherited is a subtle brain dysfunction that can lead to a learning disability.



However,



While genetics may be partly responsible for learning disorders, it is likely that environment also plays an importance in their development.

Twin Studies



- Allow the relationship of genetics and environment to be studied separately.
- In studies of identical (monozygotic) twins raised separately, the concordance rate for reading disorders was 68%.
- This points to a high correlation between genetics and learning issues.
- However since it is not 100% there are still other influencing factors.

Therefore...

- Some learning difficulties may stem from the family environment.
- If parents have expressive language disorders they may verbally interact less with their children,
- or the language they use may be full of grammatical errors.



This is not classified as a disability....

Although the child lacks the stimulation and/or the support for acquiring language, and therefore, may appear learning disabled...

this may not be the case...



- Adequate testing should elucidate the exact etiology of the difficulty.
- And as the child gains exposure and skill the apparent disability should disappear.



Learning Disabilities do not disappear

- A *developmental delay* occurs when the student is not exposed to the material.
- Once the student is exposed to the material, the problem is alleviated.
- A *learning disability* is a life-long problem. While a student may learn to work with the problem, it does not disappear even with repeated exposure.

Therefore....

A learning delay should eventually disappear

whereas

A learning disability is cortically related and is permanent.

But individuals with learning problems

- Can learn how to learn differently by using a process psychologists call Remediation.

More information about learning disabilities and cortical function can be found on other Power Point Presentations

The David Center