

# Anxiety and Learning Disabilities: Co-Morbidity of Learning Disabilities and Mental Health

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*A Caring, Learning Community*

*London Region Learning Disabilities Symposium*

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Note: To ensure effective implementation of the knowledge and strategies discussed in this presentation, it is recommended that parents and school teams consult with the Psychology Service staff member assigned to the child's school.



# History of Learning Disabilities

Key Considerations

# History of Learning Disabilities

- April 6, 1963
  - *“Exploration Into the Problems of The Perceptually Handicapped Child”*

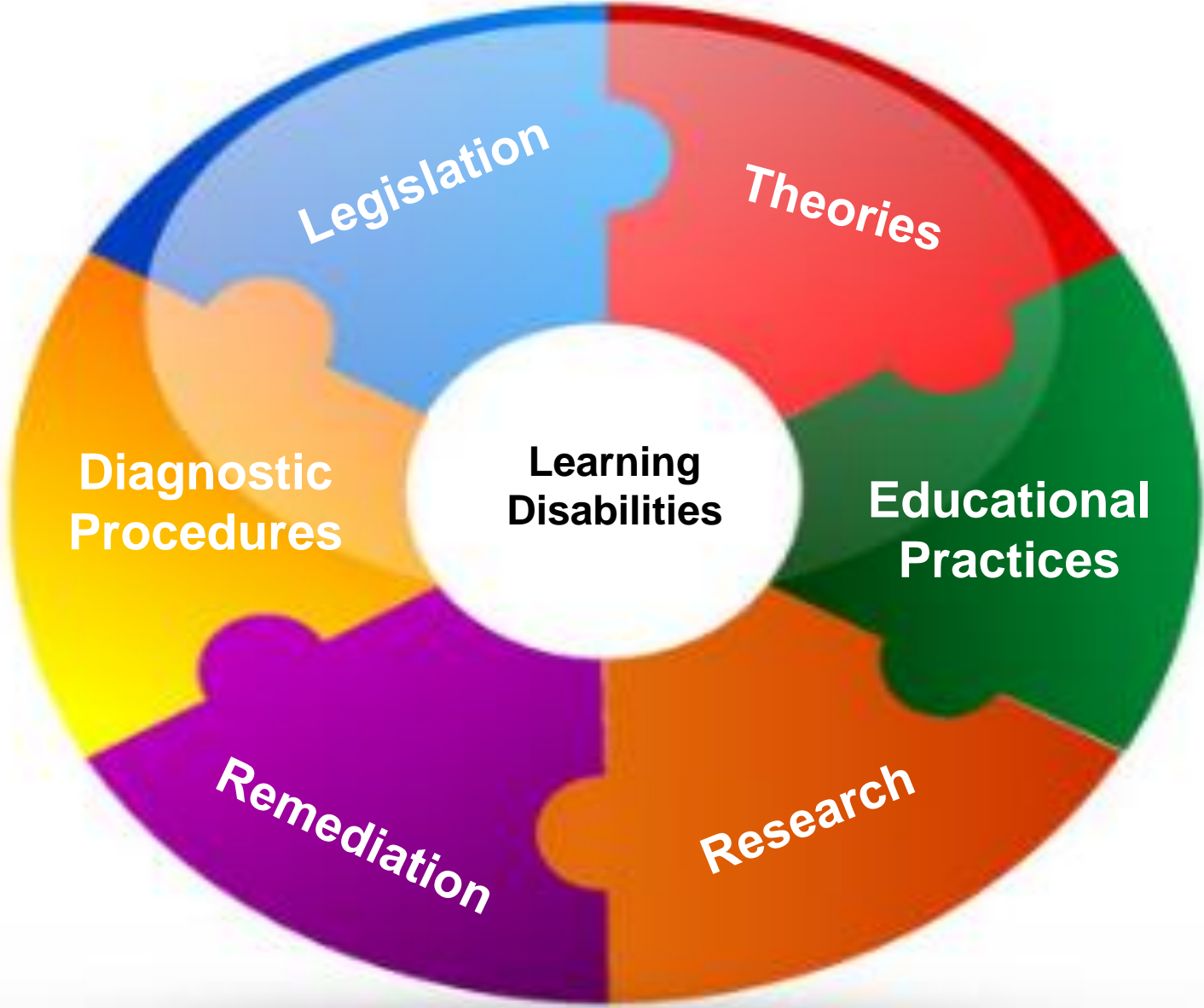


Dr. Samuel Kirk

“Behavioural Diagnosis and Remediation of  
***Learning Disabilities***”

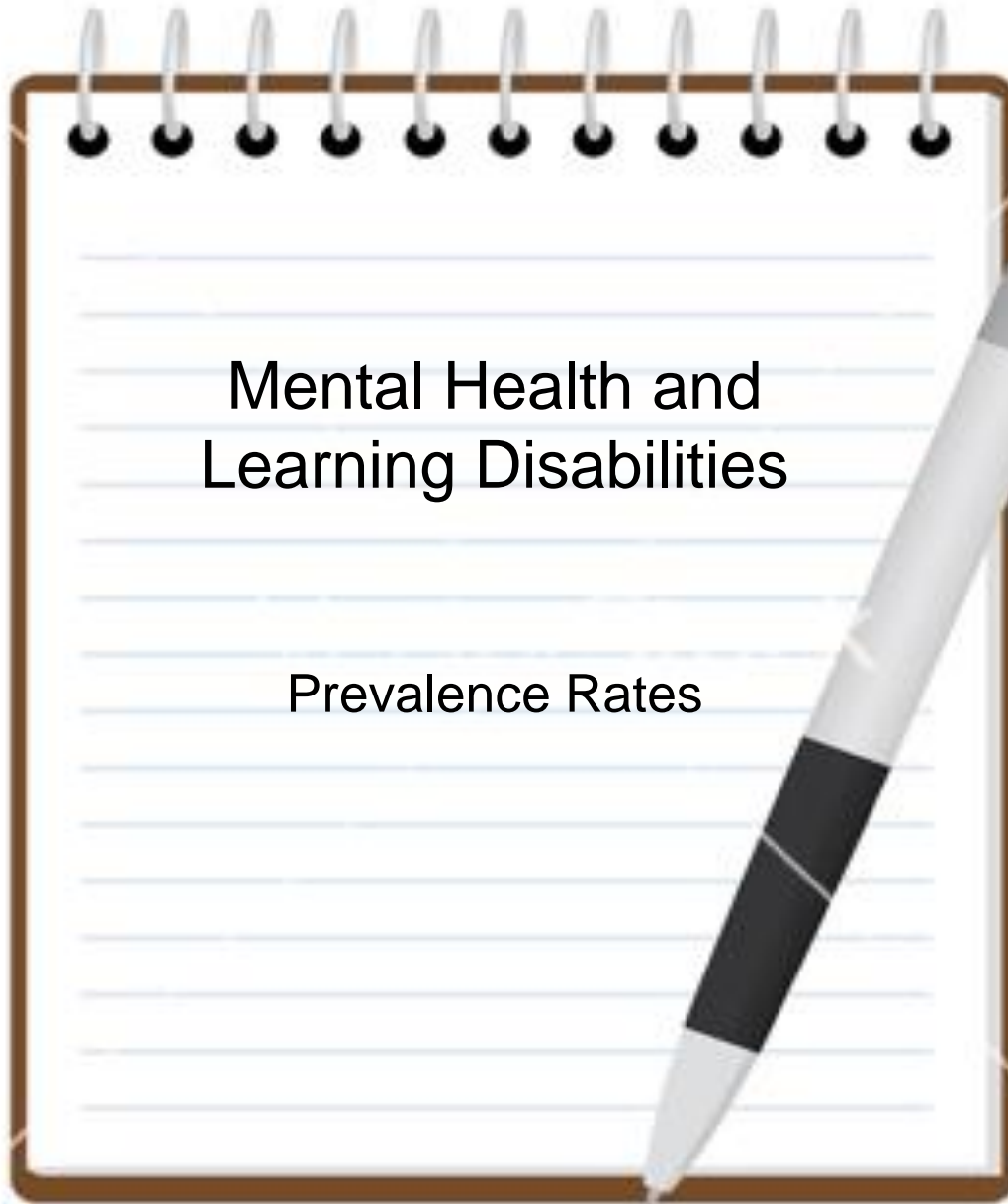
Credited for coining the term Learning Disability

***“Father of Special Education”***









# Mental Health and Learning Disabilities

Prevalence Rates



# How Common Are Mental Health Problems In Children and Youth?

- In Ontario, approximately 1 and 5 children and youth under the age of 19 have a mental health problem (*Children's Mental Health Ontario*)
  - Approximately 20% of students in a typical classroom



# Prevalence Rates of Learning Disabilities

- Estimates suggest that between 5 and 10% of Canadians have a learning disability (*LDAO*).



# Learning Disabilities and Comorbidity

- Individuals with a LD are at increased risk for co-morbid (or co-occurring) disorders.

## Neurodevelopmental Disorders

- ADHD
- Communication Disorders
- Developmental Coordination Dis.
  - Autism

## Mental Health Disorders

- Anxiety
- Depression
- Bipolar Disorder



Anxiety  
&  
Learning Disabilities

# Learning Disabilities and Anxiety Disorder

Margari et al. *BMC Neurology* 2013, **13**:198  
<http://www.biomedcentral.com/1471-2377/13/198>



RESEARCH ARTICLE

Open Access

## Neuropsychopathological comorbidities in learning disorders

Lucia Margari<sup>\*</sup>, Maura Buttiglione, Francesco Craig, Arcangelo Cristella, Concetta de Giambattista, Emilia Matera, Francesca Operto and Marta Simone

### Sample:

- 448 patients aged 7 to 16 years of age with a diagnosis of a learning disability

### Key Findings:

- Anxiety disorder was found in 28.8% of the sample

# Learning Disabilities and Anxiety Symptoms

 HAMMILL INSTITUTE  
ON DISABILITIES

## Learning Disabilities and Anxiety: A Meta-Analysis

Jason M. Nelson<sup>1</sup> and Hannah Harwood<sup>2</sup>

Journal of Learning Disabilities  
44(1) 3–17  
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sagepub.com/journalsPermissions.nav  
DOI: 10.1177/0022219409359939  
<http://journaloflearningdisabilities.sagepub.com>  


### Abstract

This article presents the results of a meta-analysis of the empirical literature on anxious symptomatology among school-aged students with learning disabilities (LD) in comparison to their non-LD peers. Fifty-eight studies met inclusion criteria. Results indicate that students with LD had higher mean scores on measures of anxiety than did non-LD students. The overall effect size was statistically significant and medium in magnitude ( $d = .61$ ) although substantial heterogeneity of results was found. Moderator effects were examined for informant type, gender, grade, publication status, and identification source. Informant type (i.e., self-, parent, or teacher report) explained a significant amount of variability in the sample of studies, and identification source (i.e., school identified or special school and clinic/hospital identified) approached statistical significance. Implications for assessment and intervention are discussed.

### Study Design:

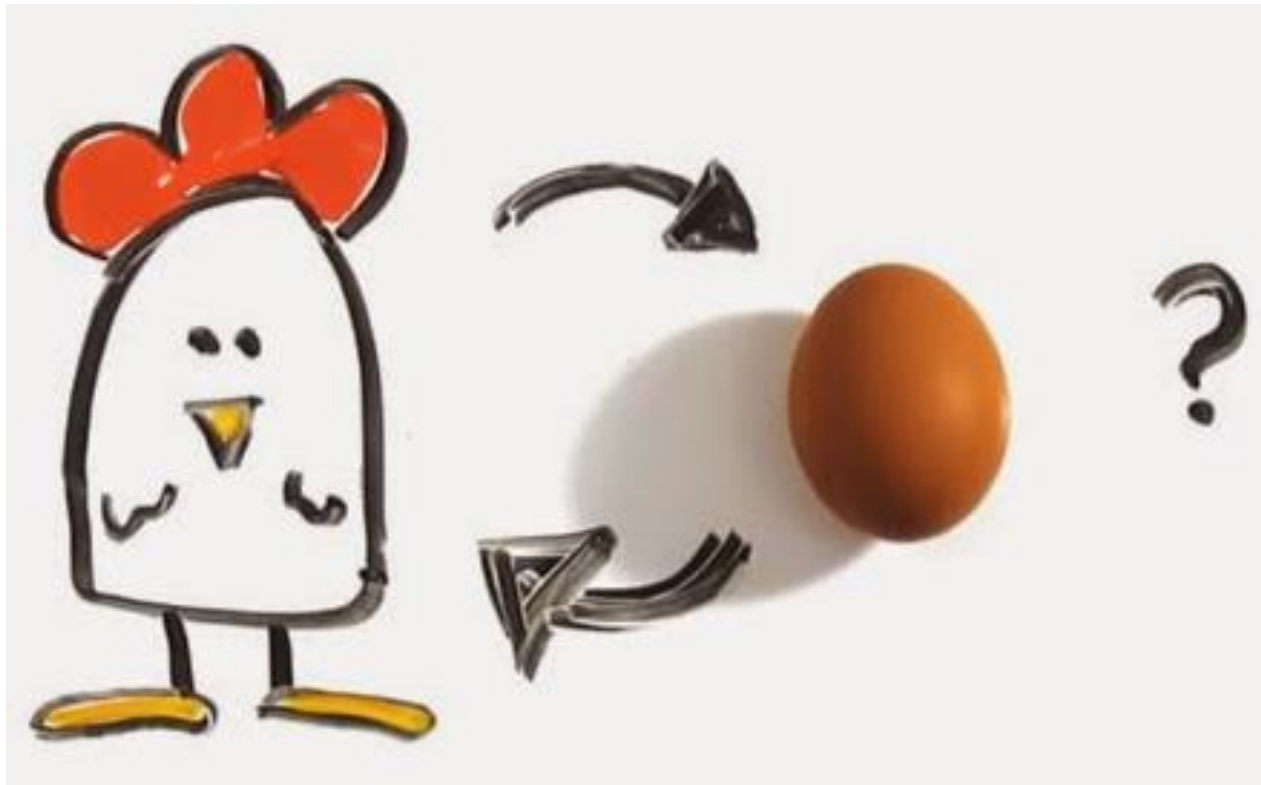
- Meta-analysis - 58 studies examining the relationship between anxious symptomatology among school-aged students with LD and non-LD.

### Key Findings:

- Approximately 70% of students with a LD experience higher anxious symptomatology than do non-LD students.

# Anxiety and Learning Disabilities

## *Theoretical Explanations*



<http://www.clicksandclients.com/chicken-egg-profitable-marketing-edition/>

# Primary Disorder Theory

*(Spreeen, 1989)*

High Levels of Anxiety



Learning Disabilities



# Secondary Reaction Theory

*(Spren, 1989)*

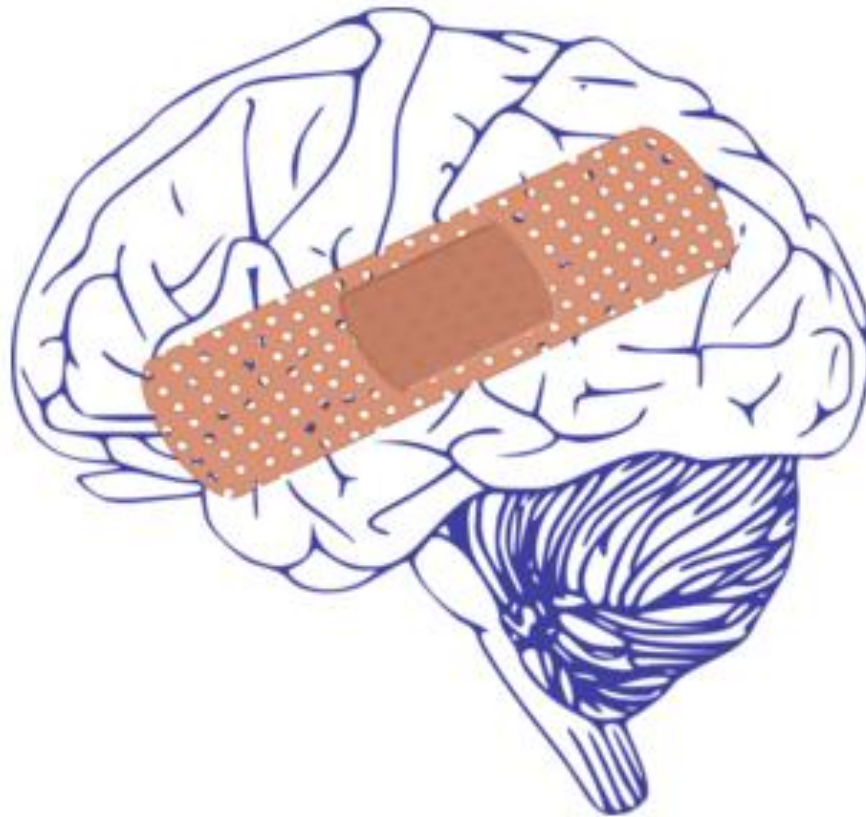
Learning Disabilities



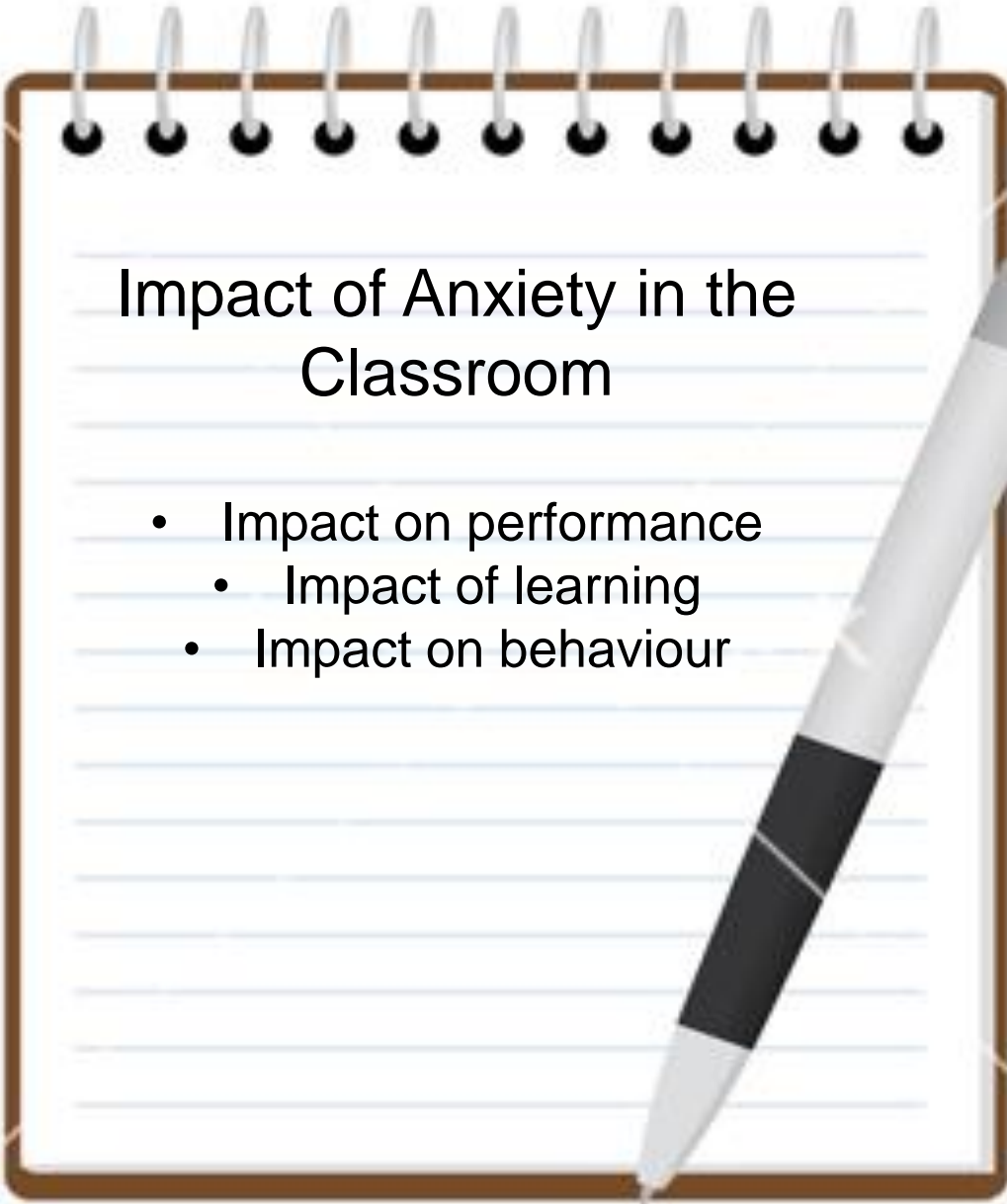
High Levels of Anxiety

# Cerebral Dysfunction Theorists

*(Spreeen, 1989)*



LD and anxiety have common brain-based etiology, and therefore, frequently co-occur.

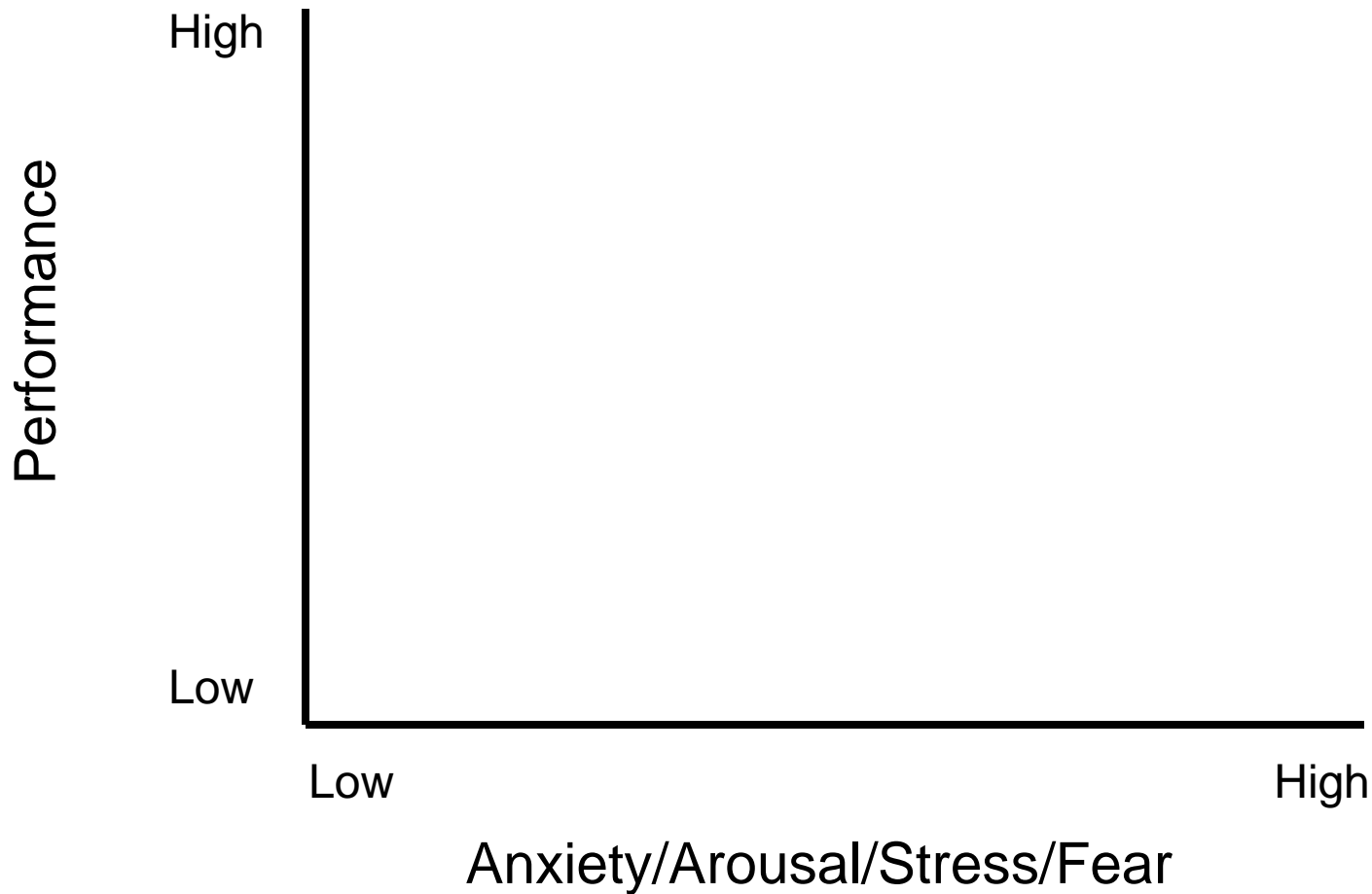
A spiral-bound notebook with a brown cover and silver spiral binding. The notebook is open to a page with light blue horizontal lines. A silver and black pen is resting on the bottom right corner of the page. The text is written in black on the page.

## Impact of Anxiety in the Classroom

- Impact on performance
  - Impact of learning
  - Impact on behaviour

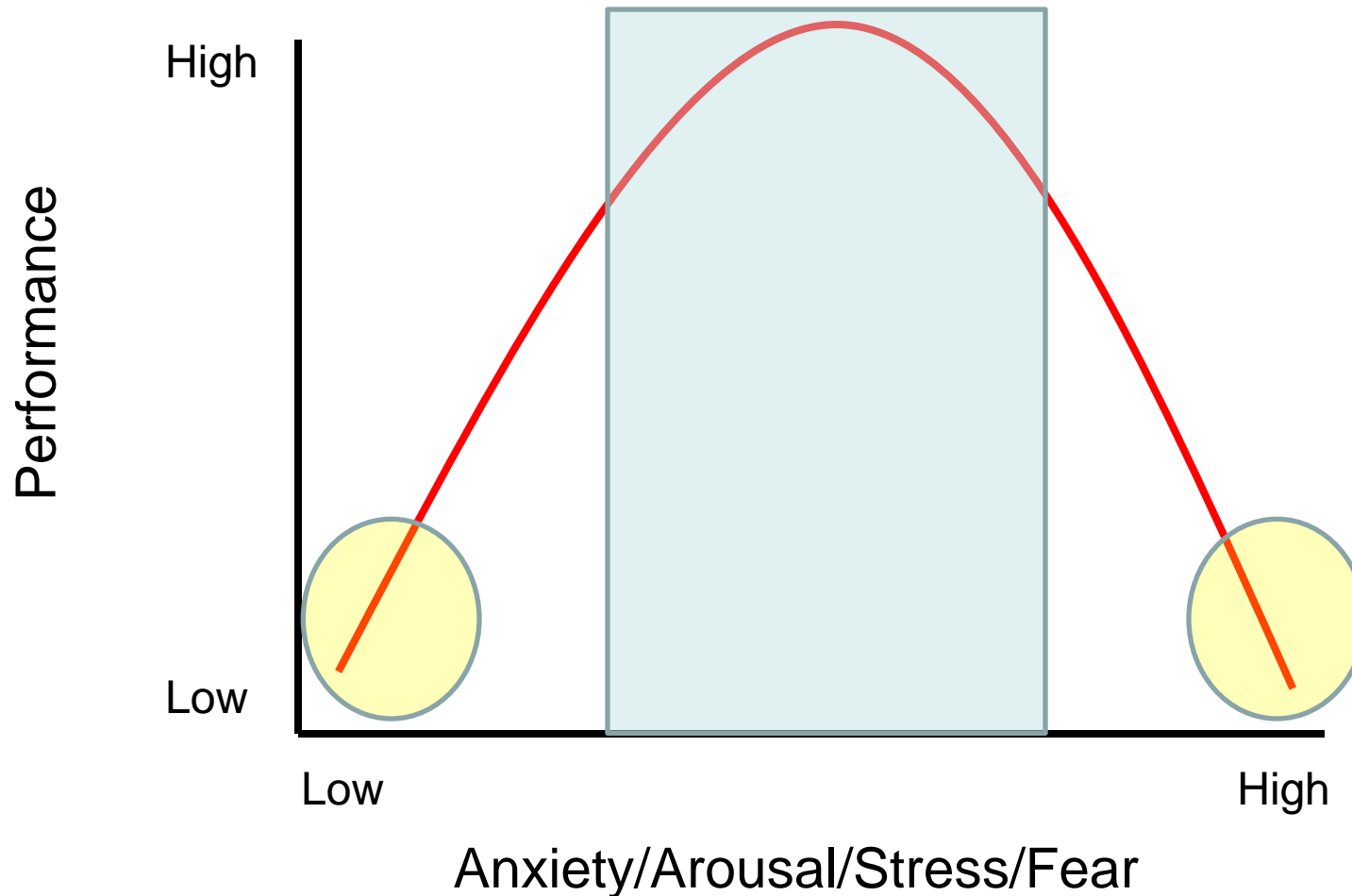
# Does Anxiety Impact Performance?

**Yerkes- Dodson Law – 1908 (Inverted U Theory of performance)**



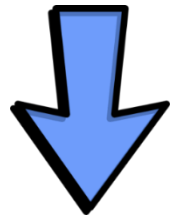
# Does Anxiety Impact Performance?

Yerkes- Dodson Law – 1908 (Inverted U Theory of performance)



# Does Anxiety Impact Learning?

- **Studies have shown that anxiety impacts learning by:**
  - Disrupting attention, focus, and concentration
  - Disrupting efficient information processing
  - Increasing feelings of frustration and discouragement
  - Gaps in learning due to higher levels of absenteeism
  - Students not being able to engage because of somatic complaints (e.g., headaches, stomach aches, etc.)



## Fear and Anxiety Affect the Brain Architecture of Learning and Memory

### PREFRONTAL CORTEX

Center of executive functions; regulates thought, emotions, and actions. Especially vulnerable to elevation of brain chemicals caused by stress. Matures later in childhood.

### AMYGDALA

Triggers emotional responses; detects whether a stimulus is threatening. Elevated cortisol levels caused by stress can affect activity. Matures in early years of life.

### HIPPOCAMPUS

Center of short-term memory; connects emotion of fear to the context in which the threatening event occurs. Elevated cortisol levels caused by stress can affect growth and performance. Matures in early years of life.

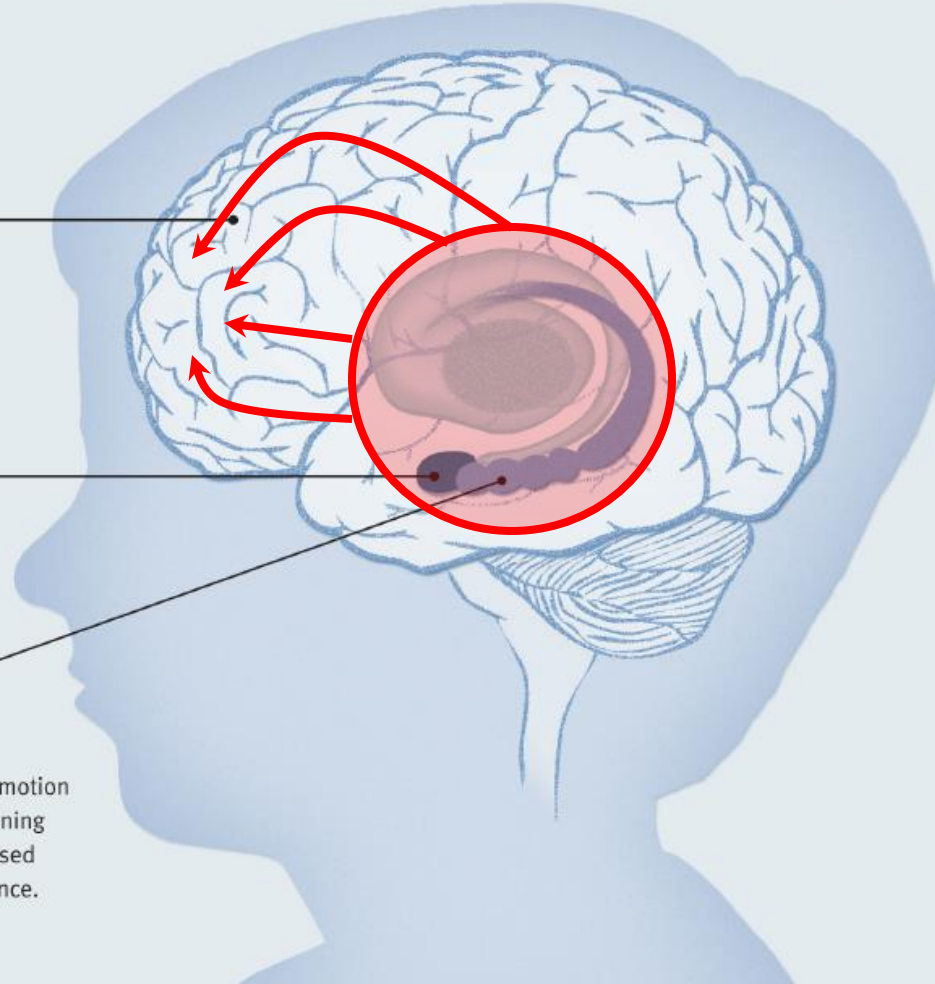


ILLUSTRATION BY BETSY HAYES

Source: Persistent Fear and Anxiety Can Affect Young Children's Learning and Development: Center on the Developing Child – Harvard University ([www.developingchild.net](http://www.developingchild.net))

# Does Anxiety Impact Behaviour?







Anxiety

# Prevalence Rates

- **Clinical Levels:**
  - Approximately 6% of school aged children have “clinical” levels of anxiety (*Canadian Mental Health Association*).
- **Non-Clinical Levels:**
  - 1 in 3 Ontario students reported high levels of stress and worry over the past few weeks (*Gr. 7-12; 2011 CAMH*)

**HELLO**  
my name is

*Anxiety*

---

# Key Issues

- Anxiety, fear, and worry are normal body reactions.
- Anxiety is a **“biological warning”** system that enables us to anticipate and avoid harm and failure.
- Appropriate levels of anxiety is key for our survival and safety.
  - “Fight” or “flight” response



- Fight or Flight



## Fight Or Flight Response

When faced with a life-threatening danger it often makes sense to run away or, if that is not possible, to fight. The fight or flight response is an automatic survival mechanism which prepares the body to take these actions. All of the body sensations produced are happening for good reasons – to prepare your body to run away or fight – but may be experienced as uncomfortable when you do not know why they are happening.

### Thoughts racing

Quicker thinking helps us to evaluate danger and make rapid decisions. It can be very difficult to concentrate on anything apart from the danger (or escape routes) when the fight or flight response is active

### Changes to vision

Vision can become acute so that more attention can be paid to danger. You might notice 'tunnel vision', or vision becoming 'sharper'

### Dry mouth

The mouth is part of the digestive system. Digestion shuts down during dangerous situations as energy is diverted towards the muscles

### Heart beats faster

A faster heart beat feeds more blood to the muscles and enhances your ability to run away or fight

### Nausea and 'butterflies' in the stomach

Blood is diverted away from the digestive system which can lead to feelings of nausea or 'butterflies'

### Hands get cold

Blood vessels in the skin contract to force blood towards major muscle groups

### Muscles tense

Muscles all over the body tense in order to get you ready to run away or fight. Muscles may also shake or tremble, particularly if you stay still, as a way of staying 'ready for action'

If we don't exercise (e.g. run away or fight) to use up the extra oxygen then we can quickly start to feel dizzy or lightheaded

Dizzy or lightheaded

Breathing becomes quicker and shallower

Quicker breathing takes in more oxygen to power the muscles. This makes the body more able to fight or run away

Adrenal glands release adrenaline

The adrenaline quickly signals other parts of the body to get ready to respond to danger

Bladder urgency

Muscles in the bladder sometimes relax in response to extreme stress

Palms become sweaty

When in danger the body needs to keep cool. A cool machine is an efficient machine, so sweating makes the body more likely to survive a dangerous event

- Anxiety can help:
  - people deal with potentially threatening situations
  - study harder for an exam
  - perform better in sports



- Anxiety Disorders:
  - The brain and the body is acting as if there is an immediate and major threat even if one does not exist.
- Individuals with anxiety tend to:
  - **OVERESTIMATE** risk, danger, and threat
  - **UNDERESTIMATE** coping abilities.

# Making the Distinction

## Normal Anxiety

**Reasonable**

**Manageable**

**Mobilizing**

**Time Limited**

**Age Matched**

## Problem Anxiety

**Excessive**

**Uncontrollable**

**Paralyzing**

**Chronic**

**Age mismatched**

# Anxiety Disorders

## Separation Anxiety Disorder





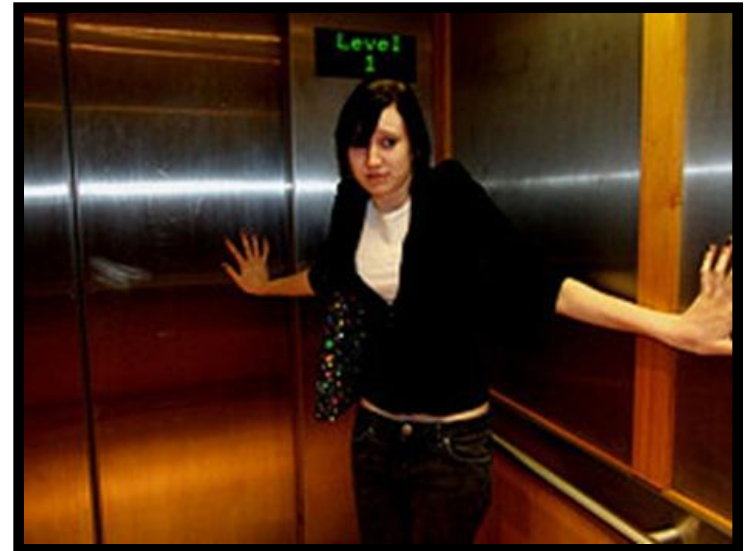
# Anxiety Disorders

Separation Anxiety Disorder  
Generalized Anxiety Disorder



# Anxiety Disorders

Separation Anxiety Disorder  
Generalized Anxiety Disorder  
Specific Phobias



# Anxiety Disorders

Separation Anxiety Disorder  
Generalized Anxiety Disorder

Specific Phobias

**Social Anxiety**



# Anxiety Disorders

Separation Anxiety Disorder  
Generalized Anxiety Disorder  
Specific Phobias  
Social Anxiety

**Obsessive-Compulsive Disorder**



# Anxiety Disorders

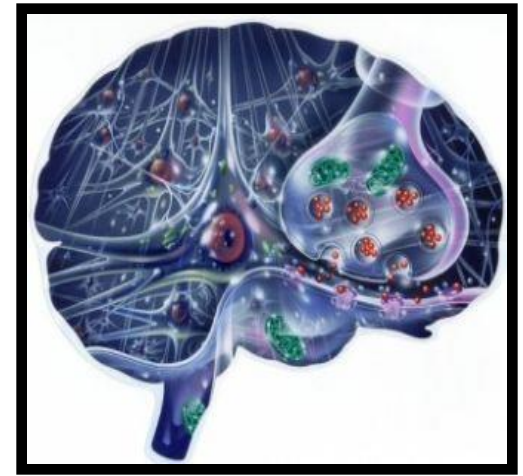
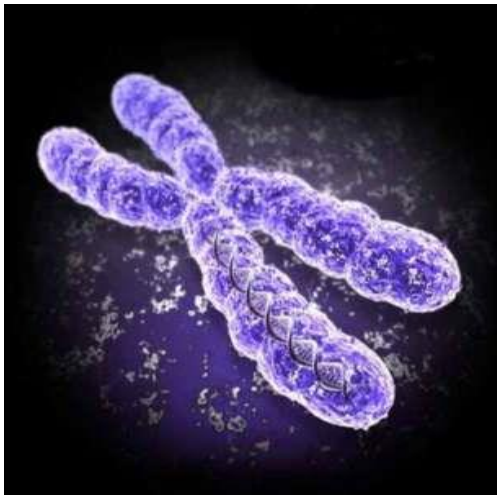
- Separation Anxiety Disorder
- Generalized Anxiety Disorder
- Specific Phobias
- Social Anxiety
- Obsessive-Compulsive Disorder
- Panic Disorder**



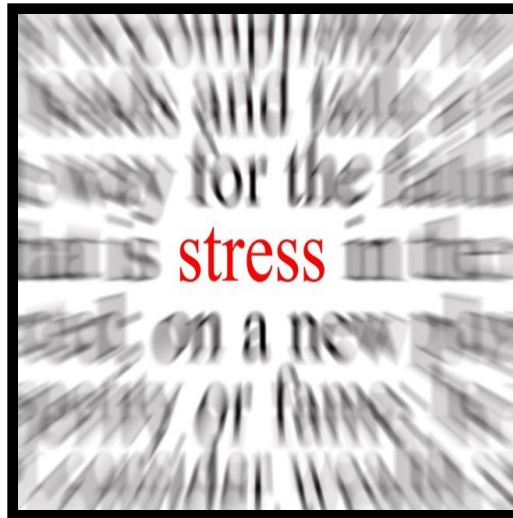
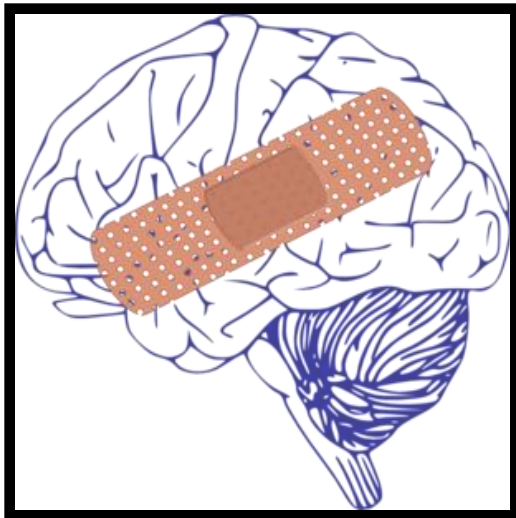
# Anxiety Disorders

Separation Anxiety Disorder  
Generalized Anxiety Disorder  
Specific Phobias  
Social Anxiety  
Obsessive-Compulsive Disorder  
Panic Disorder  
**Post-Traumatic Stress Disorder**





# Etiology of Anxiety



# The Anxious Brain

- Brain imaging studies help us better understand how brains of anxious children differ compared to non-anxious children.





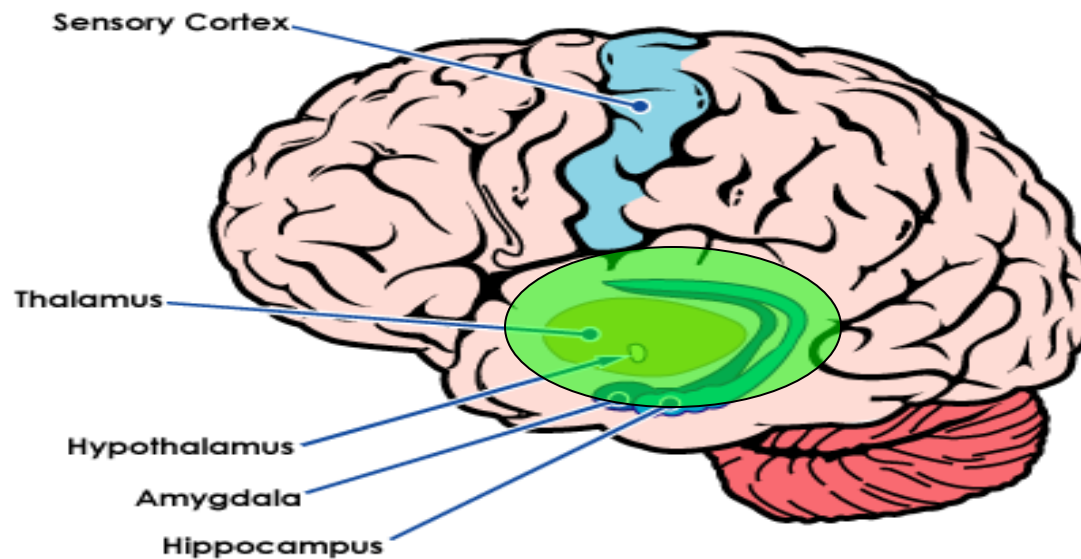
# fMRI Study

*(Thomas, K. 2001, Archives of General Psychiatry, 58,1057-1063)*

- Participants
  - Anxious and non-anxious children (8-16 years old)
- Task
  - While hooked up to a fMRI machine, view fearful and neutral facial expressions.

- Findings:
- Children with anxiety disorders showed enhanced brain responses to the fearful faces compared to non-anxious children.
- Heightened activity found in the parts of the brain associated with **fear processing** and **emotion regulation**

### Parts of the Brain Involved in Fear Response



# Unhelpful Thinking Styles

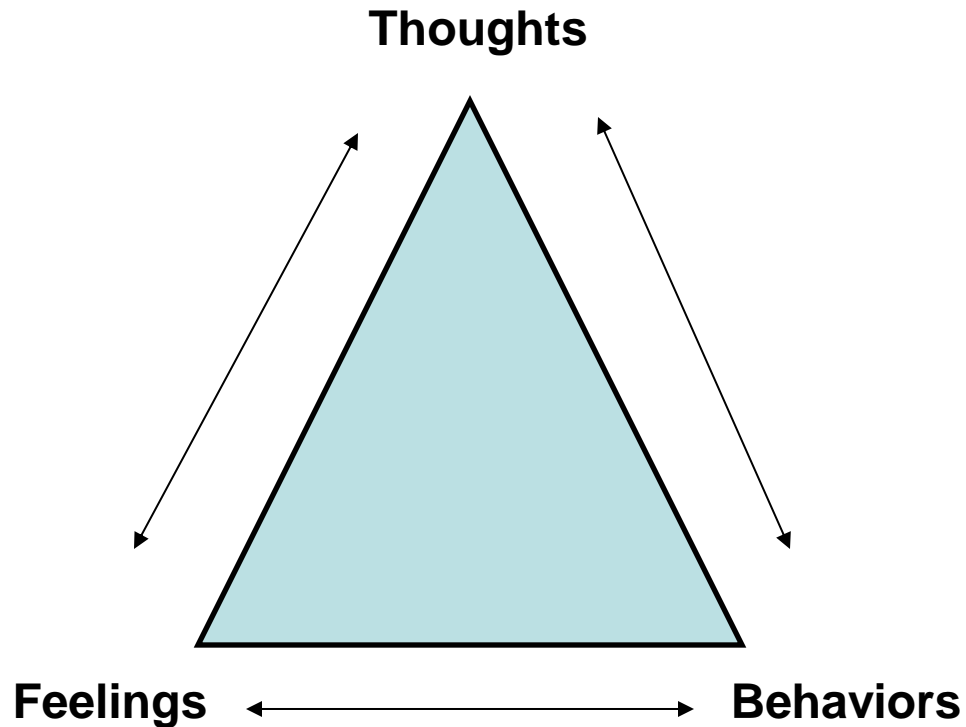
Faulty  
Thoughts

Illogical  
Thoughts

Irrational  
Thoughts

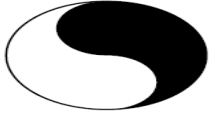
Catastrophic  
Thoughts

# Components of Anxiety



## Unhelpful Thinking Styles

### All or nothing thinking

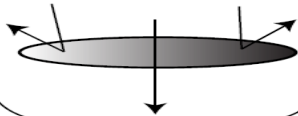


Sometimes called 'black and white thinking'

*If I'm not perfect I have failed*

*Either I do it right or not at all*

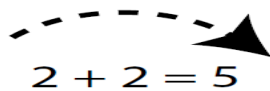
### Mental filter



Only paying attention to certain types of evidence.

*Noticing our failures but not seeing our successes*

### Jumping to conclusions



There are two key types of jumping to conclusions:

- **Mind reading**  
(imagining we know what others are thinking)
- **Fortune telling**  
(predicting the future)

### Emotional reasoning



Assuming that because we feel a certain way what we think must be true.

*I feel embarrassed so I must be an idiot*

### Labelling



Assigning labels to ourselves or other people

*I'm a loser  
I'm completely useless  
They're such an idiot*

### Over-generalising

*"everything is always rubbish"*

*"nothing good ever happens"*

Seeing a pattern based upon a single event, or being overly broad in the conclusions we draw

### Disqualifying the positive



Discounting the good things that have happened or that you have done for some reason or another

*That doesn't count*

### Magnification (catastrophising) & minimisation



Blowing things out of proportion (catastrophising), or inappropriately shrinking something to make it seem less important

**should**  
**must**

Using critical words like 'should', 'must', or 'ought' can make us feel guilty, or like we have already failed

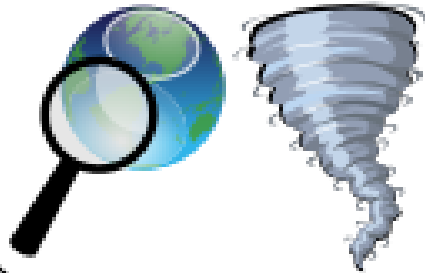
If we apply 'shoulds' to other people the result is often frustration

### Personalisation

**"this is my fault"**

Blaming yourself or taking responsibility for something that wasn't completely your fault. Conversely, blaming other people for something that was your fault.

**Magnification  
(catastrophising)  
& minimisation**



Blowing things out of proportion (catastrophising), or inappropriately shrinking something to make it seem less important

# Catastrophizing

**“Typical” Non-Anxious  
Individual**

**Average windy day**

**Just a tiny spider**

**Typical acne**

**“Typical” Anxious  
Individual**

**Storm that will cause trees to crash into  
my house and badly hurt me**

**Poisonous tarantula that can kill**

**Disgusting rash that will cause  
everyone to stare and hate me forever**

## Jumping to conclusions



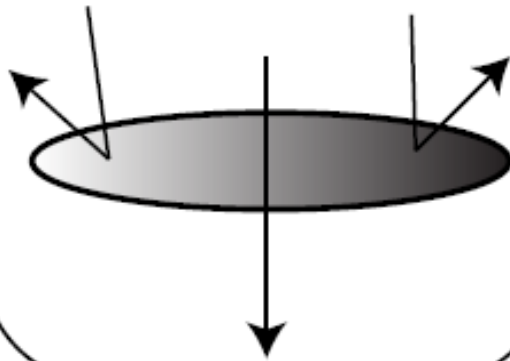
$$2 + 2 = 5$$

There are two key types of jumping to conclusions:

- **Mind reading**  
(imagining we know what others are thinking)
- **Fortune telling**  
(predicting the future)



## **Mental filter**



Only paying attention to certain types of evidence.

*Noticing our failures but not seeing our successes*

**Irrational  
Thoughts**



**Disproportionate  
Thoughts**

**Illogical  
Thoughts**

**Catastrophic  
Thoughts**

**If we can address the errors in thinking, we can have a significant impact of anxiety**

# Cognitive Behavioural Therapy

- Cognitive Techniques
  - *Thinking*
    - Strategies to change faulty thoughts to more realistic ones
- Behavioural Techniques
  - *Actions*
    - Strategies to support graduated exposure to anxiety inducing situations
- Physiological Techniques
  - *Feelings*
    - Strategies to facilitate greater levels of relaxation and calmness

# Help Students Change “Faulty” Thoughts to “Realistic” Thoughts



# How to identify faulty thoughts

- Simple guiding question:
  - “What is the *worst case scenario* if.....?”



- Using the “so what” questioning technique

- Identify first thought; after each thought, we put the word “so what” ...

- “I’m not a very good speaker”.....**so what?**
- “I might make a mistake”.....**so what?**
- “I will look like I don’t know what I’m doing”.....**so what?**
- “The audience will think I don’t know anything in this area”
- “The audience will think I don’t know anything at all”
- “They will tell other people about how I don’t know anything”
- “More people will know about my lack of skills and knowledge”
- “I will develop a poor reputation of being incompetent”
- “Important people will also find out about my incompetence”
- “I won’t be able to get a job”
- “I’ll be a failure ”

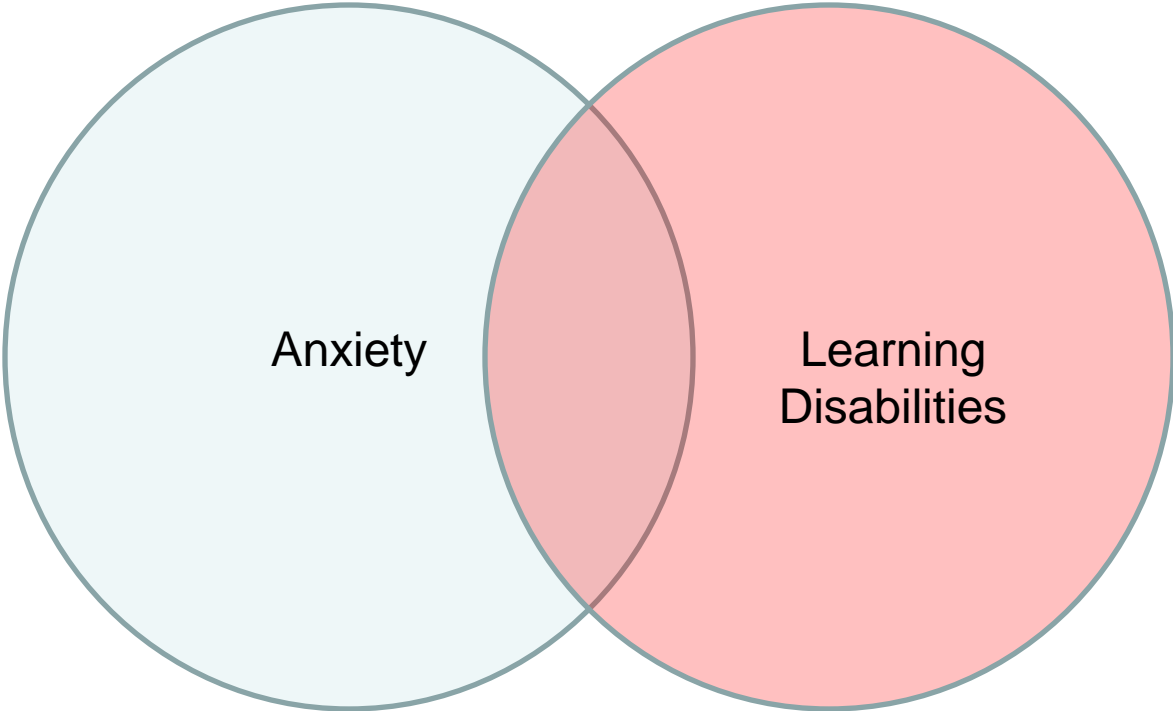
- Test (faulty) thoughts by examining available evidence and experiences:
- Discussing:
  - What happens to other people in similar situations?
  - Most likely thing to happen?
  - What happened when I worried before?
  - How many times has my “worst case scenario” actually come true?
  - Etc.
- Do research to find the “hard facts”



# BOSS BACK THOSE WORRIED THOUGHTS!!!!





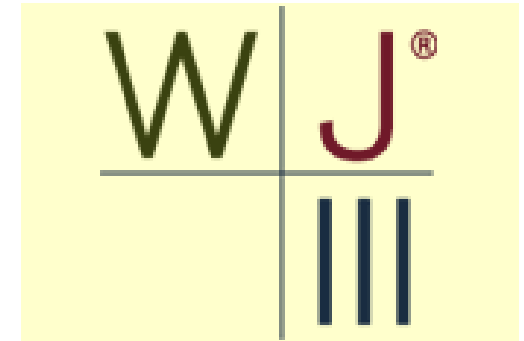
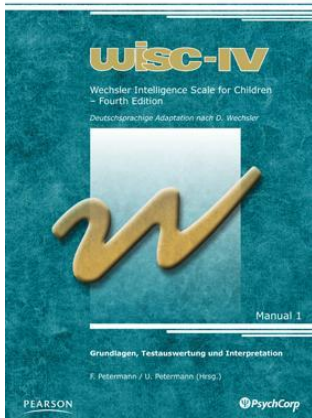


Anxiety

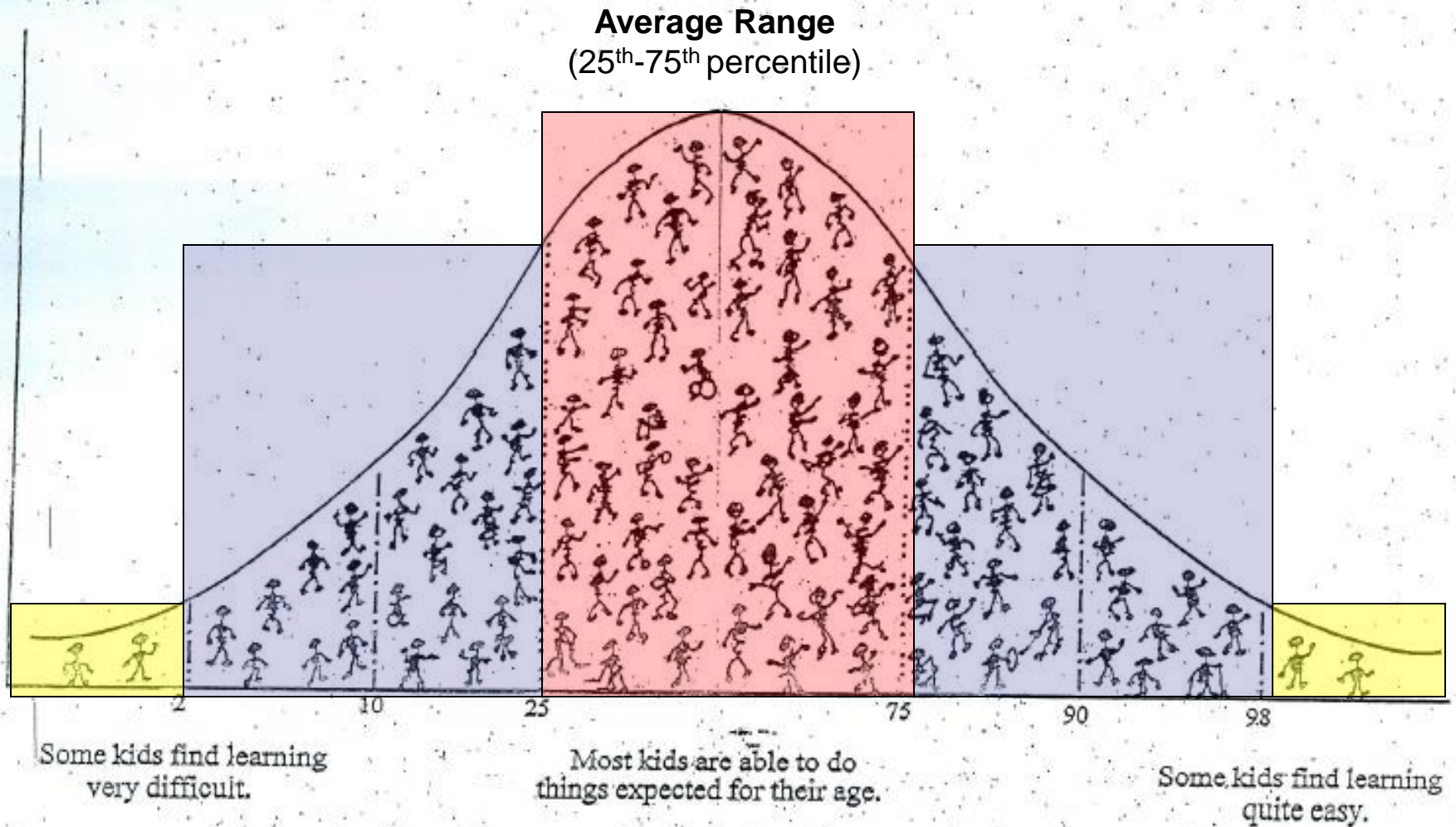
Learning  
Disabilities

# Learning Disabilities

- Significant difference between a student's overall cognitive abilities (IQ) and their academic achievement.



# Learning Disability Profile

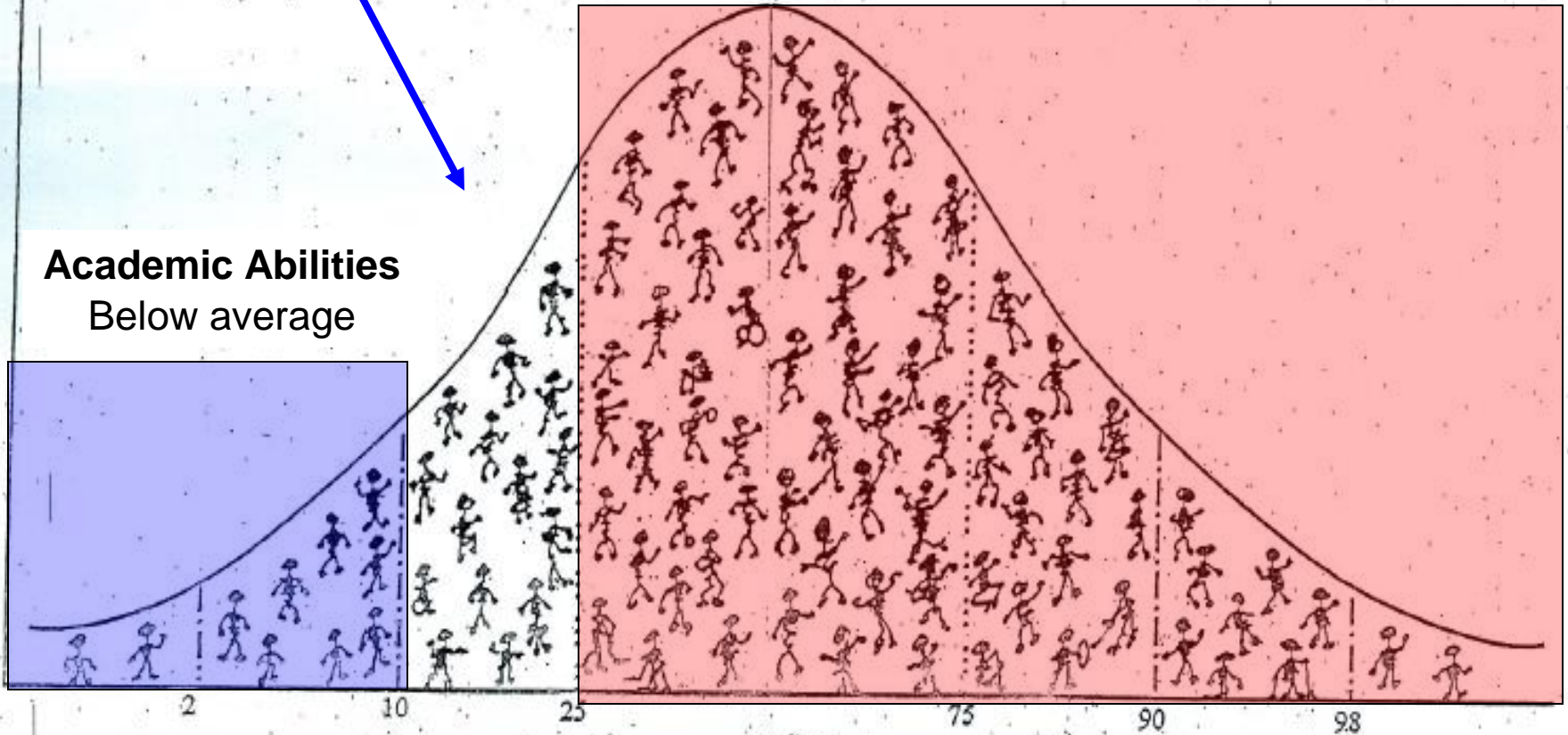


# Learning Disability Profile

**Processing Deficit**

**Cognitive Abilities (IQ)**  
Average or above average

**Academic Abilities**  
Below average



Some kids find learning very difficult.

Most kids are able to do things expected for their age.

Some kids find learning quite easy.

# Cognitive Distortions and Learning Disabilities

- **Faulty thoughts** are a major contributor to the hardships experienced by students with a learning disability.

I'm so **STUPID!**

## Labelling

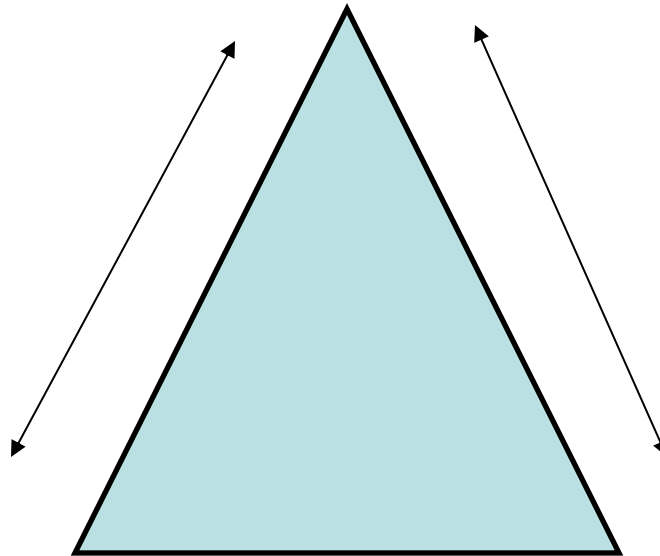
Assigning labels to ourselves or other people

**STUPID**

*I'm a loser  
I'm completely useless  
They're such an idiot*

**“I’m so STUPID!”**

**Thoughts**



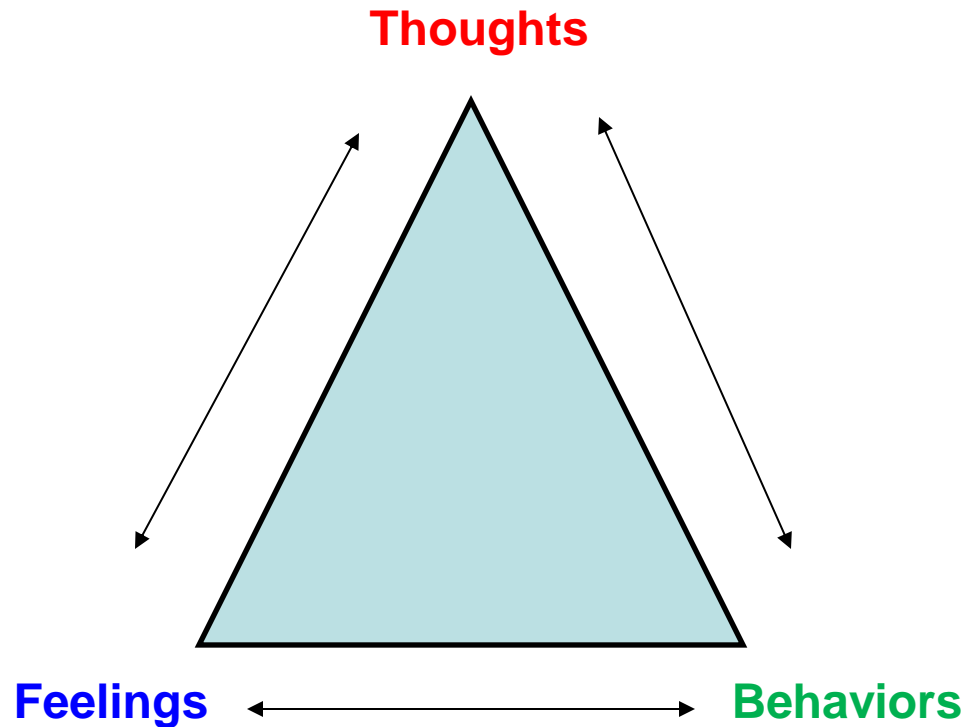
**Feelings**

**Behaviors**

- Overwhelmed
- Ashamed
- Purposeless
- Unsuccessful
- Frustrated
- Dejected
- Etc..

- Avoidance
- Escape
- Withdrawal
- Disruptiveness
- Class Clown
- Procrastination
- Oppositional
- Etc..

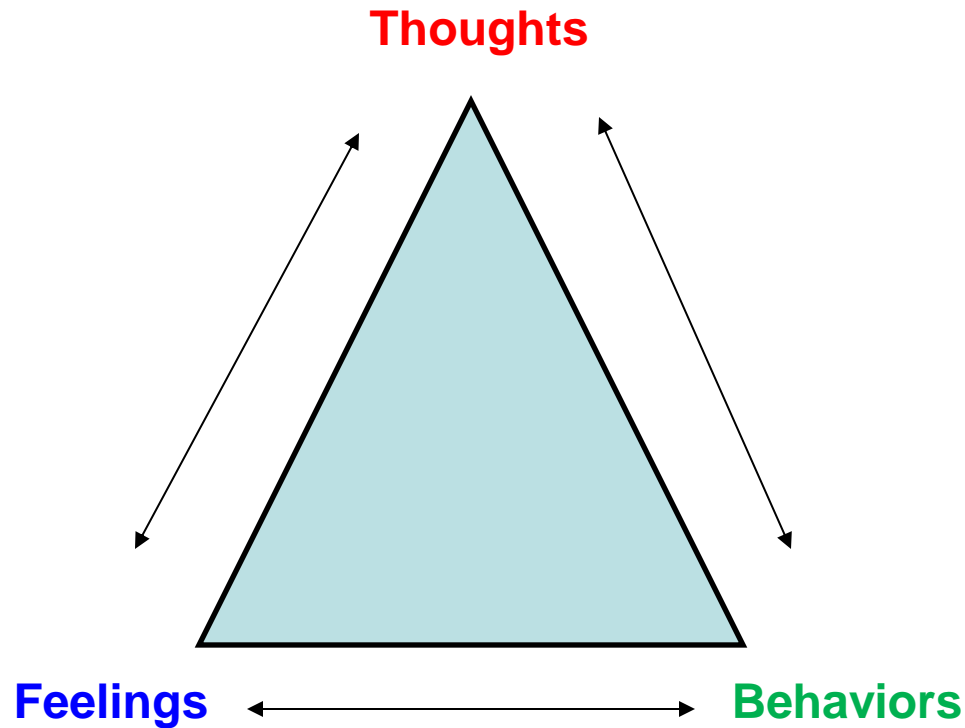
**“What’s the use, I ALWAYS get EVERYTHING WRONG!!”**



- Overwhelmed
- Ashamed
- Purposeless
- Unsuccessful
- Frustrated
- Dejected
- Etc..

- Avoidance
- Escape
- Withdrawal
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- Etc..

**“This will take FOREVER!!!”**

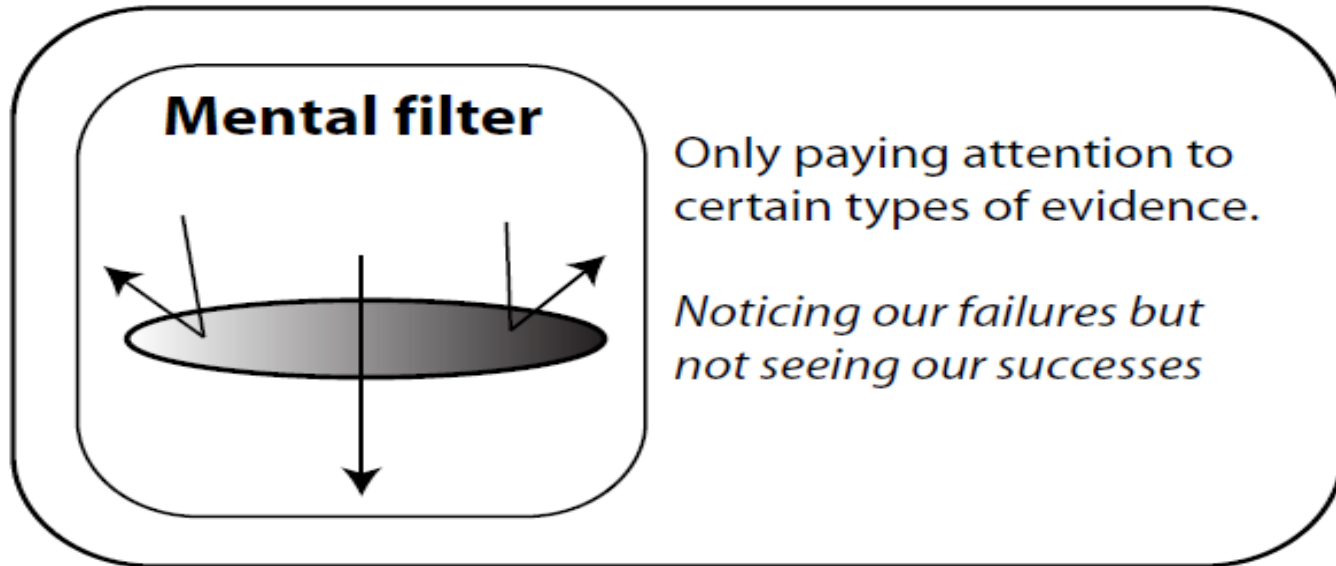


- Overwhelmed
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- Etc..

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# Thinking Errors and Learning Disabilities

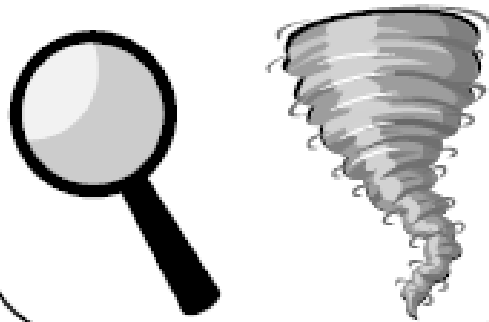


- Tendency for students with a learning disability to focus on their deficits.



- Tendency for students with a learning disability to overlook, disregard, downplay, or reject positive aspects about themselves or school.

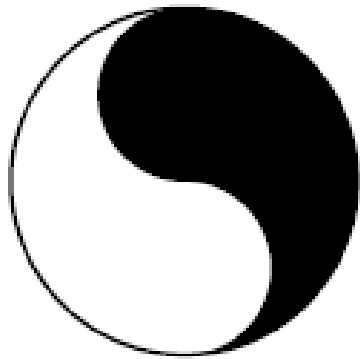
**Magnification  
(catastrophising)  
& minimisation**



Blowing things out of proportion (catastrophising), or inappropriately shrinking something to make it seem less important

- Tendency for students with a learning disability to view mistakes as catastrophic instead of a normal part of the learning process and as opportunities to learn how to do things differently.

## **All or nothing thinking**



Sometimes called 'black and white thinking'

*If I'm not perfect I have failed*

*Either I do it right or not at all*

- Tendency for students with a learning disability to focus on “output” instead of “effort” or needing to do things “perfectly” or “not at all”.

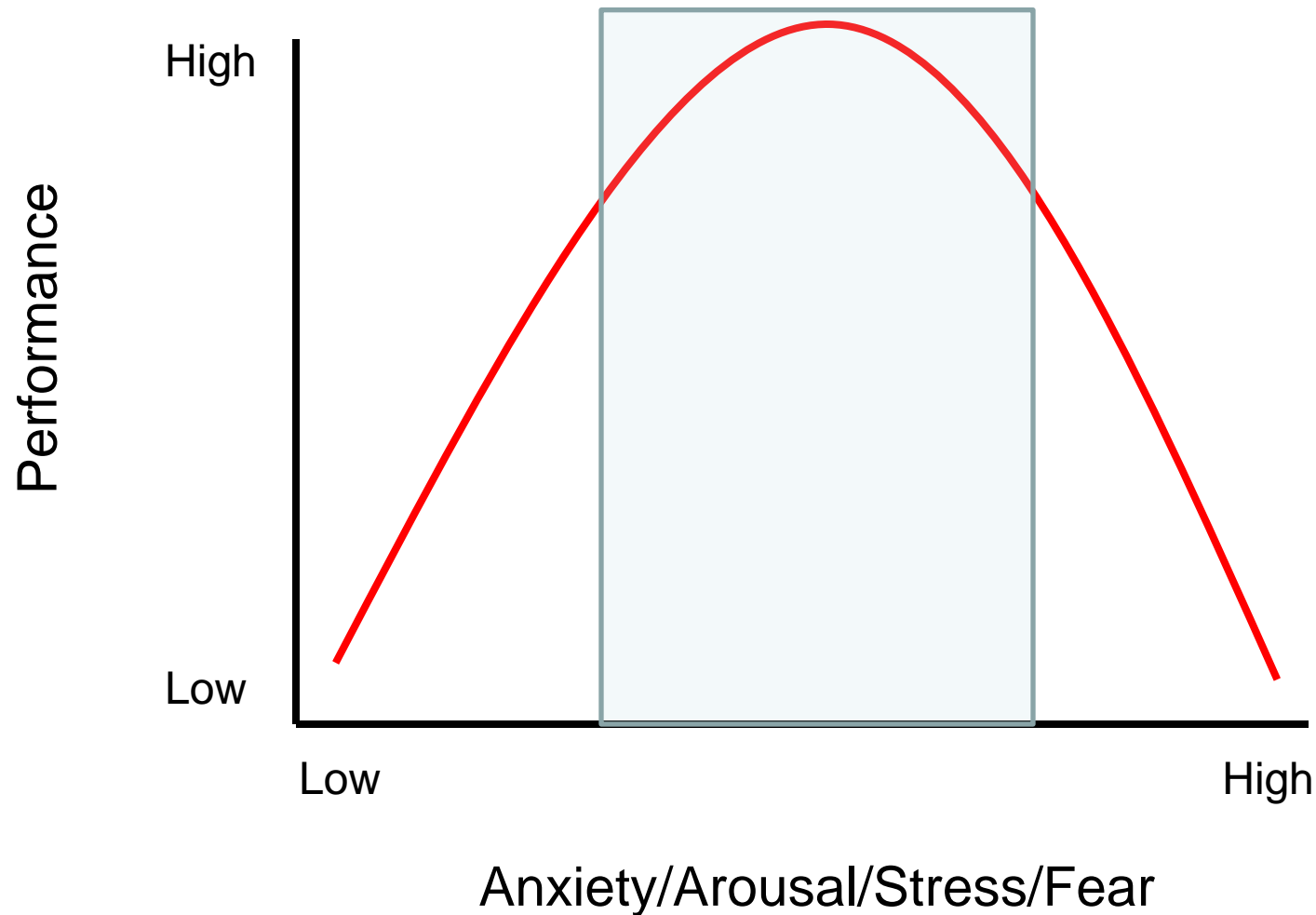
**Personalisation**

***“this is  
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Blaming yourself or taking responsibility for something that wasn't completely your fault. Conversely, blaming other people for something that was your fault.

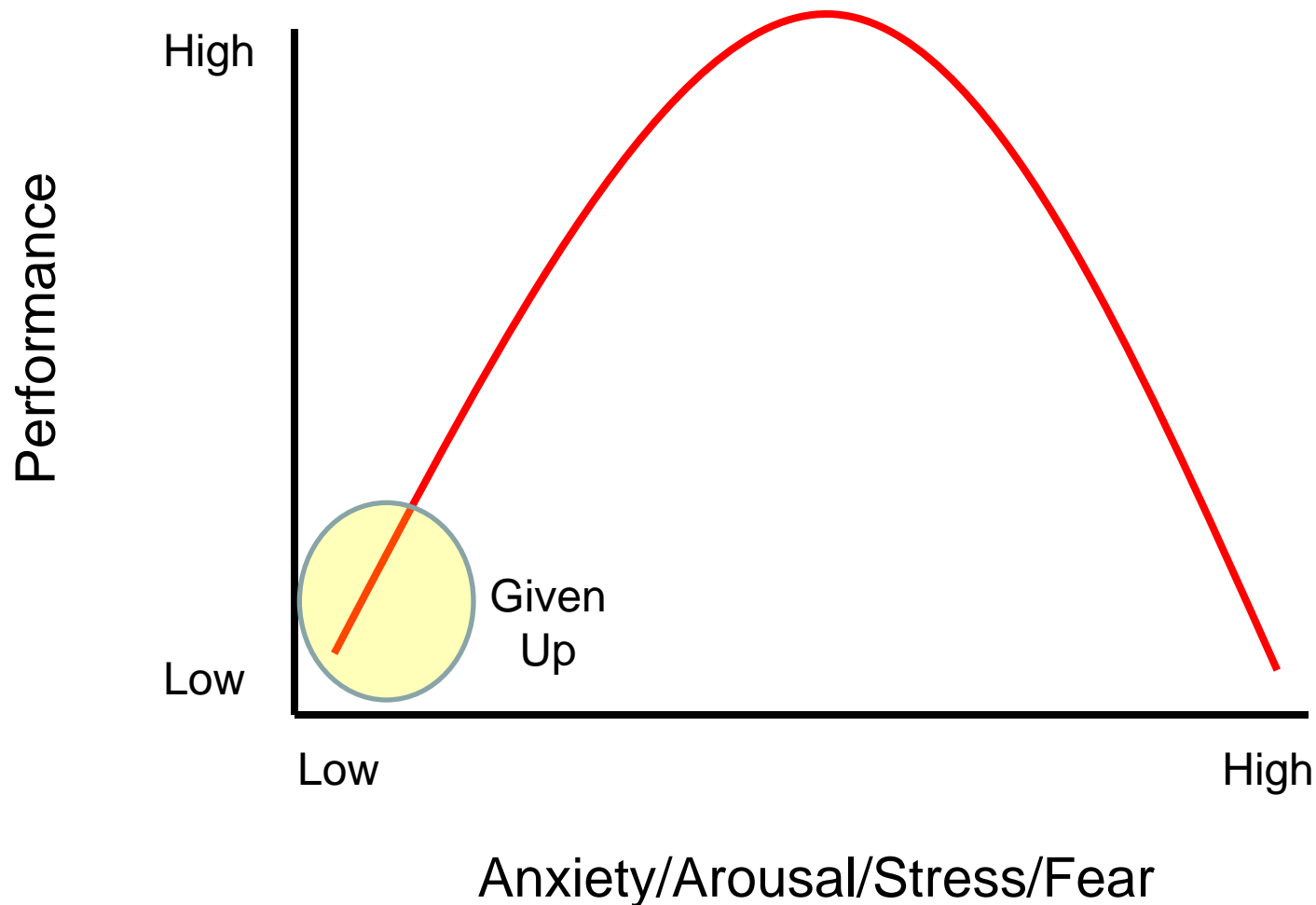
- Tendency for students with a learning disability to put blame on themselves or others (e.g., teachers) for some of the hardships they experience as a result of having a learning disability.

# Why MUST we Address Unhelpful Thinking Styles?



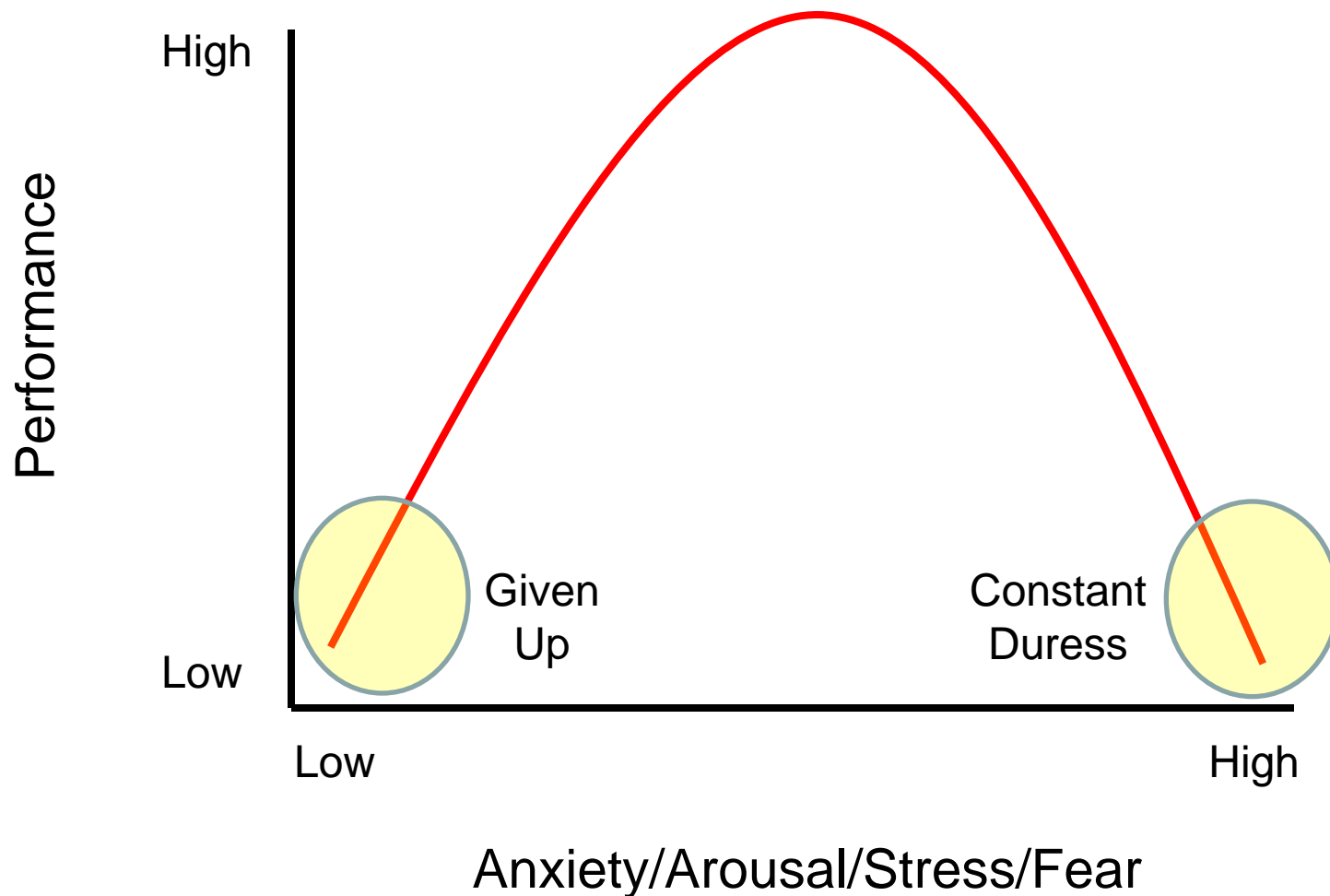
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Yerkes- Dodson Law – 1908 (Inverted U Theory of performance)



# Why MUST we Address Unhelpful Thinking Styles?

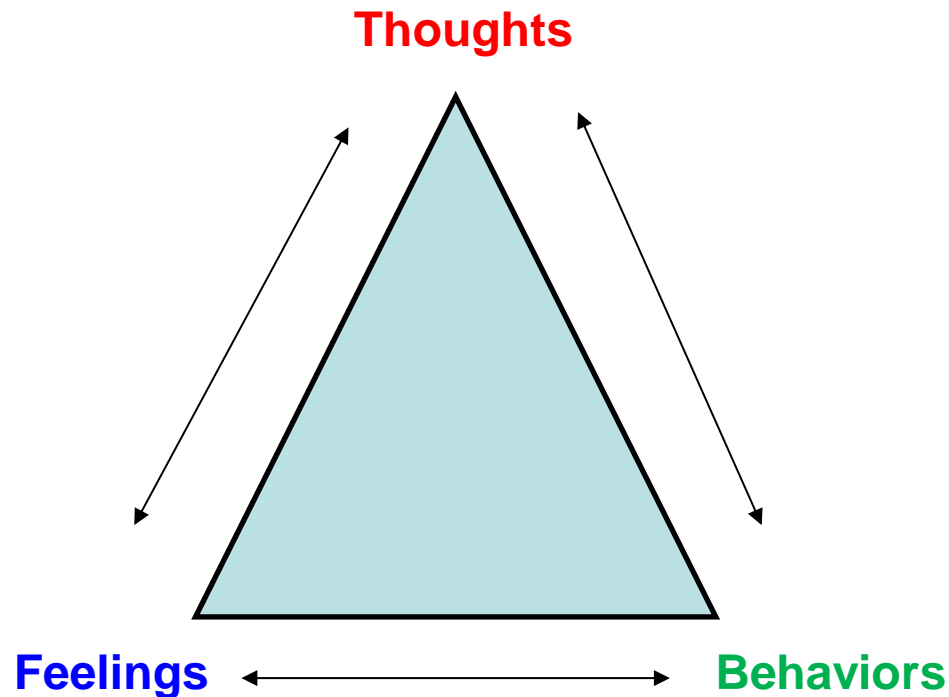
Yerkes- Dodson Law – 1908 (Inverted U Theory of performance)





# What Do We Do?

- Identify faulty thoughts and *sensitively* but *directly* challenge them by examining all available *evidence*!



Faulty Thought	Evidence to Explore	Realistic Thought
<ul style="list-style-type: none"> <li>“I’m so stupid”</li> </ul>	<ul style="list-style-type: none"> <li>Demystifying LDs.</li> <li>Review assessment findings and highlight strengths (e.g., 55<sup>th</sup> % ile on IQ).</li> <li>Comments on report cards.</li> </ul>	<ul style="list-style-type: none"> <li>“I may not be the smartest person in the universe, but I’m not the dullest.”</li> <li>“I scored better than half the kids my age who took this same test”</li> </ul>
<ul style="list-style-type: none"> <li>“Im the only one in my class who doesn’t understand this”</li> </ul>	<ul style="list-style-type: none"> <li>Discussion with teacher about general student struggles.</li> <li>Encourage student to check in with classmates about how much they know about certain topics (secondary students).</li> </ul>	<ul style="list-style-type: none"> <li>“Learning new things can be tough for lots of people”</li> <li>“Several of my friends are also struggling, so I’m not alone”</li> </ul>
<ul style="list-style-type: none"> <li>“Everything about school sucks”</li> </ul>	<ul style="list-style-type: none"> <li>Explore aspects of school that the student enjoys and excels at (e.g., sports teams, clubs, recess, gym class, music class, drama, lunch time, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>“Some parts of school are great, some parts of school are not so great”</li> <li>“I actually like more parts of school than I dislike”</li> </ul>

Faulty Thought	Evidence to Explore	Realistic Thought
<ul style="list-style-type: none"> <li>• “This will take forever”</li> </ul>	<ul style="list-style-type: none"> <li>• Do one question with the student and time how long it takes to complete; multiply by the number of questions</li> </ul>	<ul style="list-style-type: none"> <li>• “This will only take 20 minutes”</li> </ul>
<ul style="list-style-type: none"> <li>• “I can’t be successful if I have this disability”</li> </ul>	<ul style="list-style-type: none"> <li>• Successful people with learning disabilities</li> </ul>	<ul style="list-style-type: none"> <li>• “Many influential people have learning disabilities”</li> </ul>

Daniel Radcliffe (Dyspraxia)



Jamie Oliver (Dyslexia)



Whoopi Goldberg (Dyslexia)



Anderson Cooper (Dyslexia)



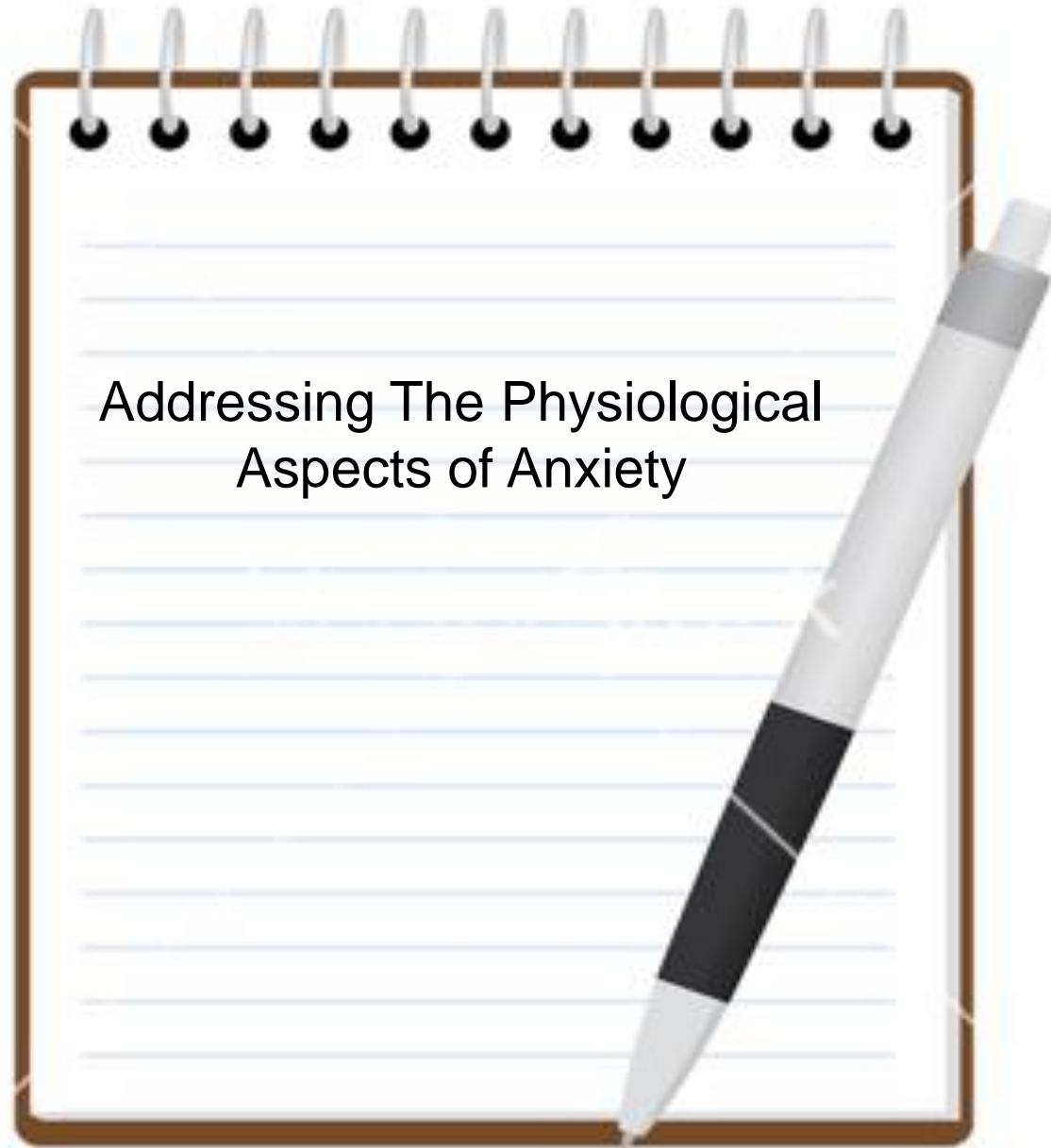
elberg (Dyslexia)



# Underestimate Coping Abilities

- Talk to students about the accommodations they are entitled to:
  - Technology
  - Extra time
  - Preferential seating
  - Quiet space
  - Calculators
  - Etc.





Addressing The Physiological  
Aspects of Anxiety

- Fight or Flight



## Fight Or Flight Response

When faced with a life-threatening danger it often makes sense to run away or, if that is not possible, to fight. The fight or flight response is an automatic survival mechanism which prepares the body to take these actions. All of the body sensations produced are happening for good reasons – to prepare your body to run away or fight – but may be experienced as uncomfortable when you do not know why they are happening.

### Thoughts racing

Quicker thinking helps us to evaluate danger and make rapid decisions. It can be very difficult to concentrate on anything apart from the danger (or escape routes) when the fight or flight response is active

### Changes to vision

Vision can become acute so that more attention can be paid to danger. You might notice 'tunnel vision', or vision becoming 'sharper'

### Dry mouth

The mouth is part of the digestive system. Digestion shuts down during dangerous situations as energy is diverted towards the muscles

### Heart beats faster

A faster heart beat feeds more blood to the muscles and enhances your ability to run away or fight

### Nausea and 'butterflies' in the stomach

Blood is diverted away from the digestive system which can lead to feelings of nausea or 'butterflies'

### Hands get cold

Blood vessels in the skin contract to force blood towards major muscle groups

### Muscles tense

Muscles all over the body tense in order to get you ready to run away or fight. Muscles may also shake or tremble, particularly if you stay still, as a way of staying 'ready for action'

If we don't exercise (e.g. run away or fight) to use up the extra oxygen then we can quickly start to feel dizzy or lightheaded

### Breathing becomes quicker and shallower

Quicker breathing takes in more oxygen to power the muscles. This makes the body more able to fight or run away

### Adrenal glands release adrenaline

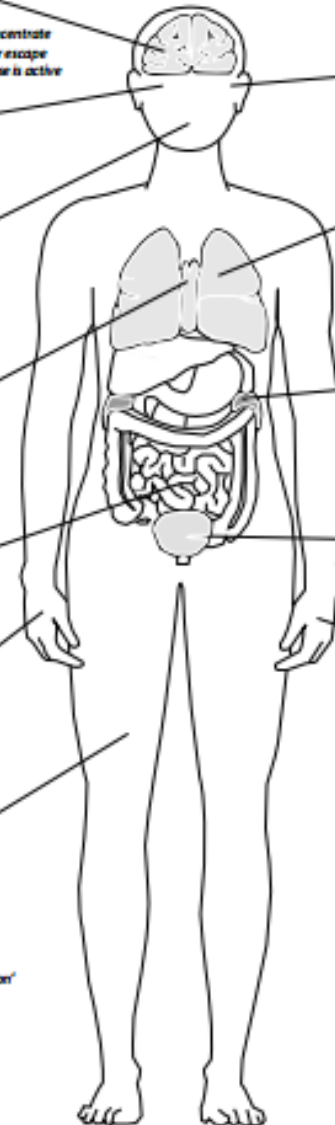
The adrenaline quickly signals other parts of the body to get ready to respond to danger

### Bladder urgency

Muscles in the bladder sometimes relax in response to extreme stress

### Palms become sweaty

When in danger the body needs to keep cool. A cool machine is an efficient machine, so sweating makes the body more likely to survive a dangerous event



- Fight or Flight

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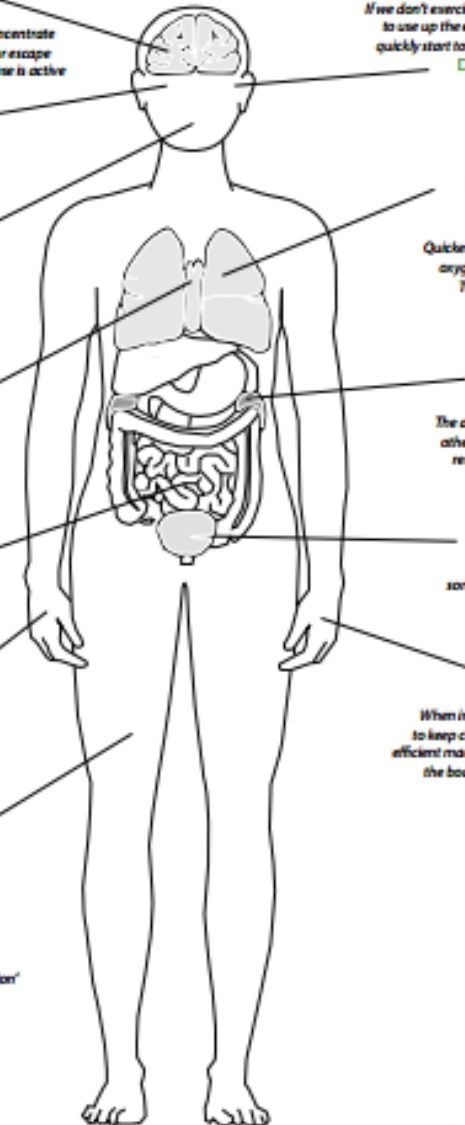
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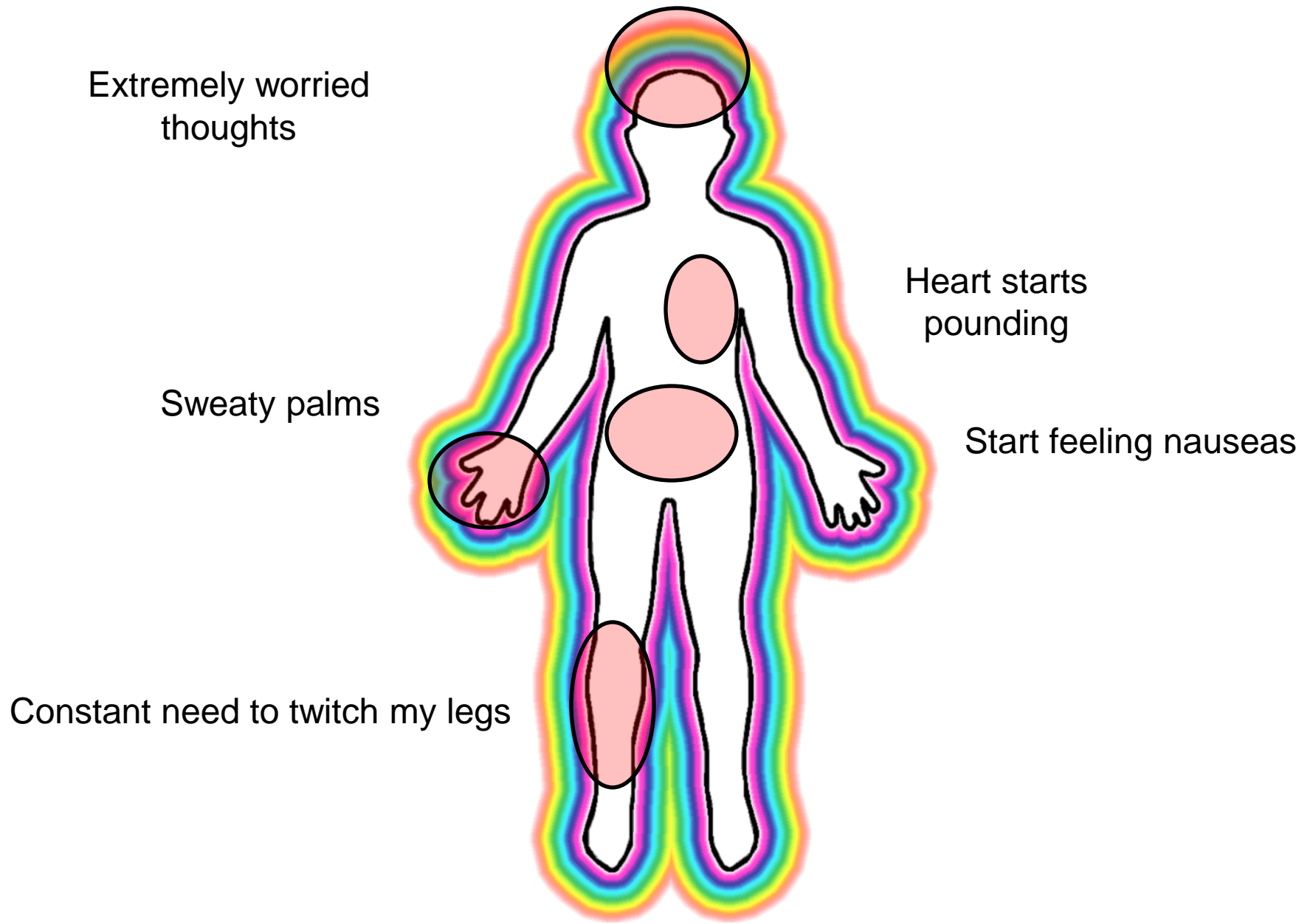
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- Talk to student about how their bodies physiologically respond to anxiety.





# Relaxation Therapy



Deep Breathing Exercises

Progressive Muscle Relaxation



Mindfulness Exercises

Imagery

Physiologically **impossible** to be anxious and relaxed at the SAME time!

# Summary

- Focus on resiliency by giving students the right tools for success!
  - Understanding the complex relationship and interplay between anxiety and learning disabilities.
- It takes a village
  - Use multidisciplinary teams and agencies





# Resources

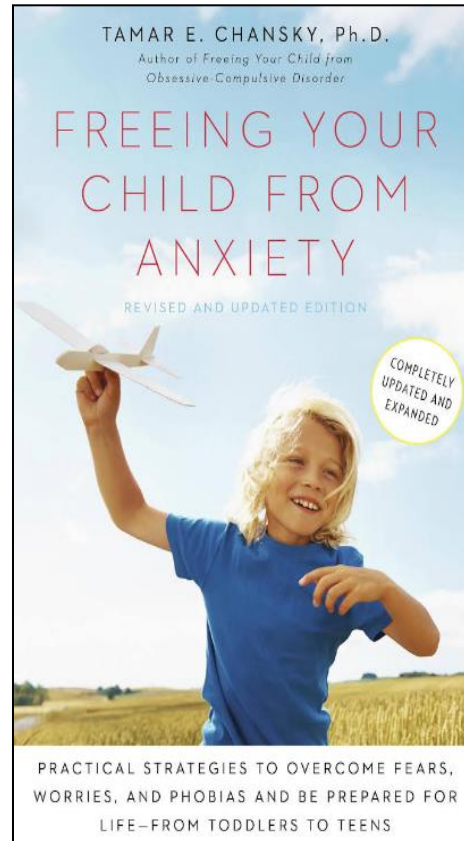


**Resources. Results. Relief.**

[www.anxietyBC.com](http://www.anxietyBC.com)



<http://www.worrywisekids.org/>



**Thank You!**