How to Help Children Develop the Underlying Cognitive Skills Needed for Success in School: How to help your child learn

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Learning issues

Even though there is a wide range of cognitive abilities among children with Galactosemia, Antshel, Epstein and Waisbren (2004) report that they may have:
- low average IQ
- less well developed executive functions
- slower processing speed
- difficulty with word retrieval


What does it mean?

“Low average IQ”
- Average IQ is 100 with a range of 85-115
- Low average means around the 85 mark
- We will talk later about Intelligence (IQ) and Cognition.
What does it mean?

“Less well developed executive functions”
- Executive functions are “responsible for a person’s ability to engage in purposeful, self-regulated, goal-directed processing of perceptions, emotions, thoughts and actions” (McCloskey and Lennon, 2010, in The Educational Practice of Educational Therapy: a teaching model, Fickelman and Adelizzi)
- Frontal lobe
- Does not develop completely until early twenties

What does it mean?

“Slower processing speed”
- Need more time to process verbal and visual information

“Difficulty with word retrieval”
- Antshel and Epstein found that “cueing” improved word retrieval ability

How to help the children overcome some of the problems: Interactive Learning

Overview

- Definitions
- What is Interactive Learning?
- How is cognition taught?
- Why do cognitive foundation skills fail to develop?
- Essential ingredients of Interactive Learning
Definitions

**Interactive Learning**
An interactional process between a child and an experienced adult, who actively guides the learning experience, by helping the child focus and understand.

**Cognition**
- "The activities of thinking, understanding, learning, and remembering." (Merriam-Webster online dictionary)
- Cognition is different from "intelligence" and is not the same as the "IQ-score".
- Cognition is modifiable.
- "Intelligence" is more stable.

**Cognitive Foundation Skills**
- Cognitive Foundation skills are the underlying thinking skills a person needs in order to LEARN.
- These skills can be taught.
  - The ability to search for information
  - The ability to gather *all the available* information
  - The ability to determine what is relevant to solving the problem

**Why Interactive Learning?**
- Children learn in two ways
  - Direct exposure
  - Through interaction (mediation/guidance)
Being able to learn through direct exposure is a LEARNED BEHAVIOR.

It is learned through development of underlying cognitive foundation skills
In other words: Cognition is taught.

For instance, children learn to focus on what is important or relevant by having things pointed out to them.

Where does Interactive Learning Start?

- Parents are their children's first teachers.
- Through interactions with caregivers, children develop cognitive foundation skills
- If a child does not get sufficient interaction his/her cognitive functioning will be affected.

How is Cognition Taught?

Scenario - walk in the park:
- Look at the dog
- Look at the dog's tail
- His tail is wagging
- That means he is happy
- When you are happy you smile
- Look, another dog. He is happy too, how can you tell?
- Remember, just like the big dog we saw before
  Maybe we will see another one when we go to the store
How is Cognition Taught?

What is taught?
- Attention and focusing
- Clear perception
- Narrowing the focus to that which is important
- Ability to pay attention to relevant information

How is Cognition Taught?

What is taught?
- Naming an event
- Meaning
- New Information
- Apply new information to another situation
- Make connections

How is Cognition Taught?

What is taught?
- Reinforcing earlier learning
- Logical evidence
- Hypothetical (abstract) thinking
- Connect past, present and future to give a sense of continuity and understanding of cause and effect
- Comparing
- Making connections between events

If it is that simple, why do those foundation skills sometimes fail to develop?

Typical Child

A-typical child
Insufficient Interaction

- Interaction not offered
- Child is not open to benefit from interaction

Insufficient Interaction

Not offered
- Environmental (e.g. orphanage)
- Socio-economic status
- Parents do not have enough time

Not open to
- Genetic factors (e.g. Down's)
- Brain damage (e.g. FASD)
- Emotional factors

Increased Levels of Interactive Learning
Interactive Learning: Essential Ingredients

- Choice
- Planning and Metacognitive Questioning
- Prompting
- Praise

Choice

- Within the context of the learning situation, the child has a choice
- No “open-ended” choices
- No “Yes-No” choices

Planning and Metacognitive Questioning

- Child and adult talk about what is going to happen, is happening and what has happened
- Before, during and after the task
- Questioning has to be non-judgmental
- Adult encourages child’s intentions, reflections, problem solving, and creativity

Metacognitive Questioning

- The purpose of questioning is to help the student become aware of his/her own thinking
- Therefore, ask PROCESS questions
- Ask for justification of both RIGHT and WRONG answers
- “Why-Question” the answer will be “I don’t know!” – CHANGE THE QUESTION.
- Genuine “I don’t know!” Help the student by prompting

Based on Feuerstein’s Mediated Learning Experience theory
Examples of metacognitive questions
- What do you need to do next?
- Tell me how you did that?
- What do you think would happen if .....?
- When have you done something like this before?
- How do you feel if ....?
- Great answer! How did you know that?

More examples
- Stop and look carefully now!
- What do you think the problem is?
- Can you think of another way we could do this?
- Why is this one better than that one?
- Where have you done that before to solve a problem?
- Let’s make a plan, so we don’t miss anything.
- How is ..... different/the same from ......?

Prompting in Interactive Learning
• Give the child the opportunity to show what he/she knows
• Use the “10-second-rule”
• Start prompting “farthest” away

“Far” prompting

Prompting in Interactive Learning
• If the student truly does not know, move in as close as is needed to make him/her respond successfully
• Move “closer” by little steps at a time
• Allow the child to give the answer, even with an extremely close prompt
• Praise

“Close” prompting

Based on Feuerstein’s Mediated Learning Experience theory
Praise

• Genuine
• Metacognition: Praise the behavior
• “Good Job” - this does not tell the child anything
• “Good Thinking!” - “Nice Straight Lines!” - “You compared these two and you found the answer!”

Summary

When you help a child learn through Interactive Learning, you draw attention to his/her environment, and his/her own internal process of thinking about situations and behavior. This is done through the process of non-judgmental questioning, prompting and praising.

Conclusion

• Never give up on a child and
• Never believe those that say nothing can be done!
• Even though it may take a great deal of effort, cognition can be improved!