




# **In-the-head activity: what does it mean?**

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### A Simple View of a Complex Theory




When a child looks at a written code and tries to make something of it, this is a **new experience for his brain** which can already deal with oral language.

The new task is about learning to recognize the **visible symbols** and making some **invisible links** to how we speak.

Clay, Marie M. (2005). *Literacy Lessons Designed for Individuals*. Part 1. p.1

### A Simple View of a Complex Theory




We create networks in the brain linking things we see (print on the page) and things we hear (the language we speak).

In the context of reading and writing this is often called *literacy processing*.

Familiar marks on the page can be linked to familiar language networks in the brain.

Clay, Marie M. (2005). *Literacy Lessons Designed for Individuals*. Part 1. p.1

### A Simple View of a Complex Theory




I chose to define reading as a message-getting, problem-solving activity, and writing as a message-sending, problem-solving activity.

Both activities involve linking invisible patterns of oral language with visible symbols.

Clay, Marie M. (2005). *Literacy Lessons Designed for Individuals*. Part 1. p.1

### Developing the brain's activities on text




On new texts, children must engage in extensive problem-solving.

They solve their problems by using their theories of the world and their theories of how to work with written language.

Information comes into the brain through the senses and the brain rapidly activates what it believes is relevant knowledge stored from prior experience.

### Developing the brain's activities on text




Our visual experience is a mixture of information coming in from the eyes and prior associations.

That is how we interpret the world and give it significance.

Clay, Marie M. (2005). Literacy Lessons Designed for Individuals. Part 2 p.100

### Developing the brain's activities on text




The brain's activities are complex .....  
To actively process information learners need to:

- Find and relate information from different sources
- Bring it together
- Construct a decision
- Monitor the effectiveness of that decision

Clay, Marie M. (2005). Literacy Lessons Designed for Individuals. Part 2 p.101

V-D2c

### Developing the brain's activities on text



Reading work (and writing work) clocks up more experience for neural networks.


The moment of truth is in the moment of input:

- How you attend
- How much you care
- How you encode
- What you do with it
- How you organize it

(how you link the thinking)

Clay, Marie M. (2005). Literacy Lessons Designed for Individuals. Part 2 p.102


### Developing the brain's activities on text



Did you notice the teacher's emphasis on thinking (the building and linking of neural networks)?

- "Try it again and think what would make sense?"
- "Were you right? Good thinking."


### Developing the brain's activities on text



It is false to assume that a central processing system for literacy already exists in the brain when the child begins literacy learning ...

Clay, Marie M. (2005). Literacy Lessons Designed for Individuals: Part 2 p.102

### Developing the brain's activities on text




**Activity**  
Think of a time when you tried to learn/learn how to do something new and just couldn't succeed

- What made it so hard?
  - List all the things

Think of a time when you tried to learn/learn how to do something you found very easy

- What made it so easy?
  - List all the things

### Developing the brain's activities on text




While learning the items we are teaching, the child's brain is building up a processing network that will deal with literacy tasks ...

He must build and expand the intricate interacting systems in the brain that must work together at great speed as he reads texts.

Clay, Marie M. (2005). Literacy Lessons Designed for Individuals: Part 2 p.102


### Developing the brain's activities on text



Think about similar processes where **the brain** builds up and expands intricate, interacting systems (or neural networks) that work together at great speed to .....

- Drive a car
- Play a musical instrument in an orchestra
- Others????

### Developing the brain's activities on text




During reading when we work on a problem we engage in a conscious search for solutions, but most of the time our active search is a fast reaction in our brain that appears to be automatic and is rarely conscious.

I use the words *strategic activities* to describe this fast brain work.

The term refers to electrical impulses that race around the neural networks as we read (or write, or drive a car, or play a musical instrument), *without us consciously directing them*.

Clay, Marie M. (2005). *Literacy Lessons Designed for Individuals*. Part 2 p.103

### Developing the brain's activities on text




Ponder a moment on these concepts:

- a conscious search for solutions
- a fast reaction in our brain
- automatic brain activity that is rarely conscious
- electrical impulses that race around the neural networks
- without us consciously directing them
- strategic activity

And think about:

- what you did during the reading of *The Beautiful Princess*

### Developing the brain's activities on text




The child is processing information about the code, picking it up from the page, working on it, putting it together with other things he knows, and making a decision.

Clay, Marie M. (2005). *Literacy Lessons Designed for Individuals*. Part 2 p.117

V-D2e

### Developing the brain's activities on text




Reading Recovery procedures provide a *misty window* on the perceptual and cognitive working of the brains of young readers and writers who are tussling with the complexity of messages.

Teachers are trying to interact appropriately with that processing.

Clay, Marie M. (2005). *Literacy Lessons Designed for Individuals*. Part 2 p.117

### Developing the brain's activities on text




I think it is most helpful to think of the learner (who is successfully solving reading problems) as building a neural network for working on written language *and that network learns to extend itself.*

The goal of teaching is to assist the child to construct effective networks in the brain for linking up all the strategic activity she will need to work on texts, not to merely accumulate items of knowledge.

Clay, Marie M. (2005). *Literacy Lessons Designed for Individuals: Part 2* p.103

V-D2g  
V-D2b

### Developing the brain's activities on text




It is the successful strategic activity called up by the learner that creates the self-extending system.

By some intricate process of connecting up and integrating the elaborate networks of several strategic activities, children increase their speed of processing.

Clay, Marie M. (2005). *Literacy Lessons Designed for Individuals: Part 2* p.114

### Teaching for "in the head" Strategic Activity



The goal of teaching is to assist the child to construct effective networks in his brain for linking up all the strategic activity that will be needed to work on texts .....

A watchful teacher must assist the learner to develop and integrate a complex set of neural processes from the beginning.

Clay, Marie M. (2005). *Literacy Lessons Designed for Individuals: Part 2* p.117

Clay, Marie M. (2001). *Change Over Time in Children's Literacy Processing*. p. 105