

Empowering Schools
in Self-Regulation of
Media and Information
Literacy processes

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What makes reading comprehension difficult for children?

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Reading comprehension is a complex task that involves a number of cognitive skills which allow a reader to understand the author's message.

How do children read for meaning?

To read for meaning means to actively interact with the text so as to be able to decode the individual words into the page and to extract the meaning from the text. The ultimate goal of reading is not decoding the words but understanding what is read (Oakhill, Cain and Elbro, 2014). So what happens during this process is that children link the words they identified into whole sentences and paragraphs. By keeping this information in mind and combining the meanings of different sentences and paragraphs, they are able to understand the message of the text. As the children link these meanings into a whole, they also combine them with what they already know from their previous knowledge. Although both stages are important to reading comprehension, the second stage is particularly important for the purpose of reading for meaning. If the text is read without a meaning then it will only be a page of printed graphemes that have a particular structure but no specific reason behind this structure. In that case, reading will be an overwhelming and demotivating task for a child who attempts to make sense of it.

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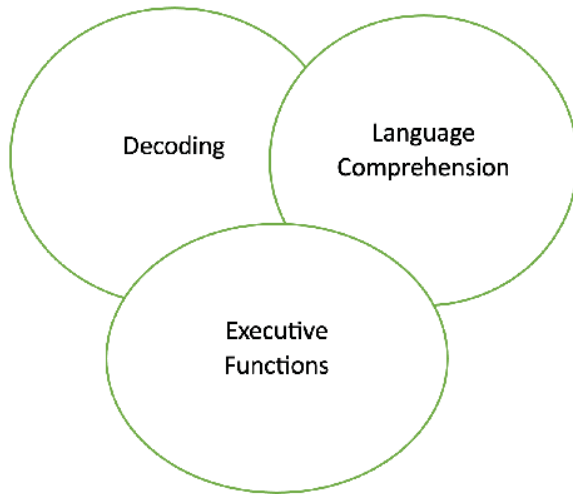


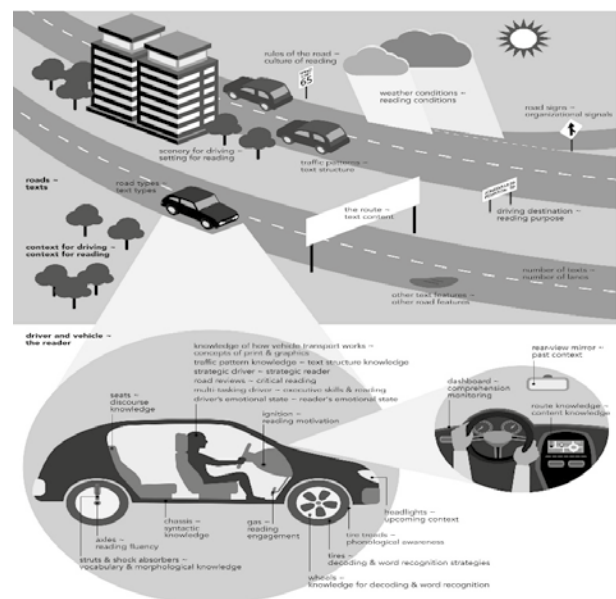
Figure 1. An adapted photo from Westby (2002)

Is it necessary for a child to be a skilled reader?

Reading for meaning is an important skill for young children as learning to read paves the way towards their successful education. Before children start school, they rely on their language comprehension to understand the world around them. They identify images they see and sentences they hear by using their vocabulary skills and then combining their meanings into a whole. When children start school and learn how to decode printed words, then their language comprehension becomes reading comprehension as the word's meanings is derived from print not from sounds. As children progress through primary school towards middle school they are frequently required to read and understand many different kinds of texts. This means that children must be skilled readers in order to be successful in school. Given the importance of reading comprehension for children's education achievement, it is necessary to consider cognitive skills which are not specific to reading but are essential to allowing the children to read for meaning. The relationship between cognitive skills and reading comprehension is described in more details in later sections.

What is the theory behind Reading Comprehension?

According to the “The simple view of reading” (Gough and Tunmer, 1986), reading comprehension comes about in two successive stages: decoding skills that is the ability to translate words from their written form to their acoustic form and language comprehension that is understanding the words meanings. But to capture the complexity of reading comprehension, a recent theoretical model known as “DRIVE” (Cartwright and Duke, 2019) takes into account also a number of other readers' characteristics and their interrelationships in the process of reading. According to “DRIVE” the reader is like an active driver who drives for purpose and by applying the driving rules already learned, he/she is able to reach his destination. Because reading is a goal-directed task, among many other personal and social circumstances children must ultimately recruit their cognitive skills. Among these, Executive Functions are cognitive skills that allow children to manage and coordinate the multiple skills needed during the reading process. By understanding the role of executive functions we will be more able to understand the difficulties that children may have in reading comprehension.



Scheme 2. The DRIVE model of reading by Cartwright and Duke 2019

Why Executive Functions?

Executive functions refer to a set of cognitive skills that an individual uses for the purpose of achieving a goal (Diamond, 2013). In the case of reading comprehension task, the goal that needs to be achieved is understanding the author's message.

There are three core executive functions (Miyake *et al.*, 2000): *updating/working memory*, *inhibition*, and *cognitive flexibility*.

When does a reader use each of the executive functions?

- A reader typically uses *updating/working memory skill* to update just-read information stored in working memory with newly-read information.
- A reader typically uses *inhibition skill* to suppress information that was read or known from before but is not relevant for the purpose of the task.
- A reader will typically use *cognitive flexibility* to shift his attention between information presented in the text with information he/she already has stored in his/her long-term memory.

Are there empirical findings supporting this?

There is a considerable number of empirical findings supporting the importance of executive functions to reading comprehension in children. The important role played by executive functions to reading has also been captured in a wide developmental span; for example, in preschool and first grades (Gua-jardo and Cartwright, 2016); in lower primary grades (Kieffer *et al.*, 2013); in upper primary grades (Cain, Bryant, and Oakhill, 2004; Cutting *et al.*, 2009).

Overall, what these findings are telling us is that to read for meaning children must deploy the three core executive functions. This is especially true when children attempt to combine what is presented in the text with what they already know. If children are not able to understand what is implied by the sentences and/or paragraphs, very often it could be that they have difficulties with their executive functions.

Practical tips

- Good comprehenders view reading as a meaning making activity rather than as a word decoding activity (Cain, 1999).
- Poor comprehenders have problems with integrating information from different parts of the text and connecting these parts with their previous knowledge (Oakhill *et al.*, 2014).

- Executive functions are important domains that aid reading comprehension in children.
- Children who struggle with executive functions may very well also have difficulty when learning to read.
- Executive functions can be trained as integrated part of reading comprehension skills (Spencer, Richmond, & Cutting, 2020).

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