



How to Assess and Improve Children's Reading Comprehension?

M.M.L. Muijselaar

SUMMARY

Reading comprehension is one of the most important skills children have to acquire during the final years of primary education. It is therefore unfortunate that many children have severe problems with a proper understanding of texts. To design methods that foster children's reading comprehension, more information about the underlying skills and processes that are involved in reading comprehension is needed.

Prerequisites for reading comprehension are the accurate and fast reading of single words and knowledge of the meaning of these words. Also, working memory and reading strategies have been shown to be required for reading comprehension. However, since reading comprehension tests have been shown to differ in the underlying skills they depend on, the first aim of this dissertation was to further investigate whether the underlying skills of reading comprehension depend on the type of reading comprehension test. The second aim was to test whether the training of knowledge and use of reading strategies leads to improvement of reading comprehension. Because most Dutch fourth-grade children are able to read fluently and reading comprehension education regularly starts in second or third grade in the Netherlands, all studies in this dissertation focused on the reading comprehension of Dutch fourth graders from regular elementary schools.

Chapters 2, 3, and 4 report on studies on the assessment of reading comprehension. In the first study (*Chapter 2*), the specific relations of updating ability, a working memory process, and knowledge of reading strategies with the performance on two Dutch reading comprehension tests, the LOVS and the CLIB tests, was examined. These tests both consisted of relatively long passages. They only differed in question format, as one test mainly contained question-and-answer questions and the other cloze questions, also known as gap-filling questions. Whereas updating ability did not have a specific effect on reading comprehension, knowledge of reading strategies did have an independent effect on reading comprehension. This effect was present after controlling for reading speed, vocabulary, and short term memory. The relations between the cognitive skills and reading comprehension did not differ across the two Dutch reading comprehension tests.

The study in *Chapter 3* concerned differences between the word reading and language comprehension demands of two American reading comprehension tests, the CBM-Maze and the Gates-MacGinitie tests. These tests were more different than the Dutch tests examined in *Chapter 2*. The Gates-MacGinitie test is a standard untimed reading comprehension test consisting of several relatively long texts and different types of questions. In contrast, the CBM-Maze test is a timed cloze test. In this study, also the developmental patterns of these demands were investigated in children from fourth, seventh, and ninth grade. The results showed that the role of decoding was comparable in the two reading comprehension tests, whereas the CBM-Maze test relied more heavily on reading fluency than the Gates-MacGinitie test. The Gates-MacGinitie test depended more strongly on vocabulary and linguistic comprehension than the CBM-Maze test. The developmental analyses revealed that the contribution of word reading and language comprehension skills remained relatively stable across grades.

The study reported in *Chapter 4* assessed reading comprehension tests on a more detailed level, as it focused on reading comprehension items, instead of on whole reading comprehension tests. Specifically, it was investigated whether specific text and question types (for example literal, inferential, and evaluative questions) could be distinguished in Dutch reading comprehension tests for fourth graders. Results indicated that reading comprehension seems to be merely a one-dimensional ability, as specific text and question types could not be distinguished reliably. As a consequence, the specific text and question types did not differ in the skills they rely on; the correlations of reading comprehension with reading speed, vocabulary, and working memory were the same across text and question types.

The studies reported in *Chapters 5* and *6* zoomed in on the knowledge and use of reading strategies in reading comprehension. In *Chapter 5*, the developmental relations between knowledge of reading strategies and reading comprehension measured in Grades 4 and 5 were examined. Knowledge of reading strategies was found to have a unique effect on reading comprehension, after controlling for reading speed, vocabulary, and working memory. In addition, reading comprehension uniquely affected the knowledge of reading strategies. Thus, knowledge of reading strategies and reading comprehension seemed to be reciprocally related.

The last study (*Chapter 6*) was an intervention study, in which the effect of reading strategy training on reading comprehension was assessed. A clustered randomized controlled trial with Grade 4 children was conducted. Teachers provided a strategy intervention to the entire class using reciprocal teaching. The intervention group outperformed the control group on knowledge of reading strategies both at the posttest and the follow-up test, indicating that this skill has been trained successfully. However, counter to the expectations, the intervention did not have an effect on reading comprehension.

The findings of the studies reported in *Chapters 2 to 6* have important implications for future reading comprehension assessment and enhancement (*Chapter 7*). Assessment of reading comprehension and the diagnosis of poor comprehenders should be based on untimed reading comprehension tests that consist of several texts and questions. These are preferred over and above timed reading comprehension tests and tests with passages of one or two sentences, as these do not have the same demands as standard reading comprehension tests. In order to investigate whether the results of this dissertation could be generalized to other reading comprehension tests as well, future research should aim at further investigating the demands of reading comprehension tests with different types of questions that are deliberately constructed to measure different subskills of reading comprehension. Additionally, it needs to be established whether reading comprehension is a one-dimensional ability in older children as well. The results of an intervention study geared towards reading comprehension improvement did not show that reading strategy training improved reading comprehension. Interventions using a content or questioning approach, that is an approach which relates directly to the construction of a situation model, might have larger effects. The effects of such interventions should be the focus of future research.