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Bos, L.T.

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Summary

The research in the present thesis was motivated by alarming findings regarding primary school children's poor reading comprehension performance and declining reading motivation. The main goal of the research in this thesis was to develop and test reading strategy trainings aimed at improving reading comprehension and reading motivation. To ensure that the training sessions were theoretically sound, they were set up within the Situation Model framework. More specifically, we wanted to investigate the influence of situation model construction on reading comprehension and how we can stimulate this construction. Another aim of this thesis was to investigate to what extent situation models play a role in various primary school subjects other than reading comprehension, we particularly looked at whether situation models can perform a function role in producing rather than understanding texts (i.e., writing a narrative). Together, this thesis makes a contribution to translation that is known from basic reading comprehension research to classroom practice at primary school level.

Chapter 1 outlines the theoretical background on reading comprehension from the Situation Model Framework. This chapter presented the main concepts, definitions, and theoretical assumptions. In particular, this chapter elaborates on three cognitive processes important for deep text comprehension on which we developed our differing interventions. Notably, the interventions targeted the situation model strategies of mental simulation, comprehension monitoring, and inference making. The three varying interventions (reported in Chapter 2 to Chapter 4) had a similar design, which enables a direct comparison between the effectiveness of the three situation model focused strategies. The studies employed a pretest-posttest control group design with the dependent variables reading strategy usage, general reading comprehension, and reading motivation. Pre- and posttests consisted of different versions of the same tests. Children from Grades 3 and 4 received training in just one of the three reading comprehension strategies. Each strategy was taught in a 4-week training course containing 8 lessons. The control group followed the school's regular reading comprehension curriculum. Finally, this chapter describes the outline of the empirical chapter within this thesis.

Chapter 2 describes the study investigating the effectiveness of a reading comprehension intervention study aimed at supporting mental simulation skills. Specifically, during the mental simulation training it was tested to observe as to what

extent teaching readers to (1) connect their perceptual, motor, and emotional experiences to text, and (2) mentally stimulate visual and motor information that is implicitly described in a text, facilitates readers situation model construction and hence deep- level comprehension. Effectiveness of the training was evaluated with the sentence-picture verification task and the sentence-sensibility judgment task. The results showed that, compared to the control group, children who had received the mental simulation training showed improved performance on general reading comprehension and scored higher on reading motivation. There were no performance differences between groups on the mental simulation measures. These findings indicate that it is beneficial for children to be encouraged to read and to teach them to connect their sensorimotor experiences to the text they are reading.

Chapter 3 presents an inconsistency-detection intervention aimed at supporting comprehension monitoring strategies to enhance reading comprehension. In particular, the comprehension monitoring training targeted at the updating of the situation model, evaluative and self-regulatory strategies, and metacognitive awareness. Effectiveness of the training was evaluated with the inconsistency-detection task. The results showed that, compared to the control group, fourth graders' inconsistency-detection performance significantly improved after the inconsistency-detection training. Third graders did not show a significant gain, suggesting that this age group may be too young for the presented training. General reading comprehension and reading motivation scores, however, were promising for all children receiving the inconsistency-detection training. These findings indicate that the inconsistency-detection training was effective to enhance children's use of monitoring strategies required for constructing and updating a coherent situation model and to transfer these strategies to novel texts.

Chapter 4 reports on the effectiveness of a reading comprehension intervention study with a focus on inference making. The inference making training aimed at enhancing readers' inference making skills in order to construct a coherent situation model. It addressed the source (text-based versus knowledge-based), type (necessary versus unnecessary for (re-) establishing coherence), and depth of an inference (making single lexical inferences versus combining multiple lexical inferences), as well as the type of searching strategy (forward versus backward). Use of the learned reading comprehension strategy was examined with the probe

recognition task. Results indicated that, compared to a control group, children who followed the experimental training improved their inference making skills to the advantage of situation model construction. Importantly, our training also resulted in increased levels of general reading comprehension and motivation. In sum, this study showed that a 'level of text representation' was valuable and such an approach can provide a useful framework to teach inference making skills to third and fourth graders

In **Chapter 5** we describe a study that focused on exploring the question as to whether the construction of a situation model supports not only the comprehension of, but also the production of a text. This was conducted by asking children to engage in writing a creative narrative and observing their ability to construct a situational and sensory rich situation model. Using path analyses, these representational abilities of children and the narrative descriptions derived from their text were related to the children's creative writing outcome. Results showed that sensory richness and situatedness explained 35% of the variance in creativity scores. Sensory richness influenced the originality/novelty of children's narrative writing directly, whereas situatedness had an indirect influence through the number of sensory words, yet both pathways influenced the outcomes to a comparable extent. Findings suggest that creative writing requires similar representational processes as reading comprehension which may contribute to the development of instructional methods to help children in creative writing assignments.

Chapter 6 proposes a more fundamental perspective at mental simulation of text information during reading. Specifically, it directly explores, within a single study, to what extent different implied visual characteristics of described objects (i.e., shape, color, size and orientation) are mentally simulated during sentence comprehension. Results showed varying match-advantages for shape, size and color; with color showing the strongest effect, but no match-advantage for orientation. Additionally, shape, size and color appeared to be significantly correlated, whereas there were no significant correlations with orientation. These results suggest that the interpretation of match-advantages would benefit from a re-evaluation of the mental simulation account based on a distinction into intrinsic (i.e. shape, size and color) and extrinsic (i.e. orientation) object properties.

Finally, **Chapter 7** provides concluding remarks on the empirical studies described in Chapter 2 through 6 in this thesis. The main findings are discussed from a situation model perspective. Notably, this chapter discusses the obtained findings of three strategies (i.e. mental simulation, comprehension monitoring and inference generating) in light of the aims outlined in the introduction (Chapter 1). Findings from the training studies are discussed according to their contributions to bridging the gap between theory and practice. Moreover, overall recommendations for further research are presented as well as perceived educational implications.