

CHAPTER 1

General introduction

In our society, where print is omnipresent and extremely important as a means of communication, possessing sufficient reading skills is crucial for participation. It has been shown that children who engage in more leisure time reading are generally better readers (e.g., Mol & Bus, 2011; Mullis, Martin, Foy, & Drucker, 2012; OECD, 2010). Long-term benefits have been reported as well. For example, leisure time reading as a child predicted adults' vocabulary scores (Sullivan & Brown, 2014), educational attainment, such as graduating from university (Evans, Kelley, & Sikora, 2014; Evans, Kelley, Sikora, & Treiman, 2010), and career prospects (Taylor, 2011). An important reason that determines whether children do or do not engage in leisure time reading is reading enjoyment. Children who enjoy reading choose to read more during leisure time, therefore they practice their reading skills more and this results in better reading performance, which will contribute to their reading enjoyment. In other words, they enter a positive reading spiral. This process has been referred to as the process of reciprocal causation (Mol & Bus, 2011; Stanovich, 1986). However, the opposite is also true, when children do not enjoy reading, they do not read much and enter a negative reading spiral, which negatively affects their reading performance. This means that the gap in reading skills between children who do and who do not enjoy reading can easily increase.

A large international comparative study has shown that only 28% of the fourth graders enjoys reading, whereas 15% does not enjoy reading at all (Mullis et al., 2012). For the Netherlands, these numbers are even more dramatic: only 20% reported to enjoy reading, while 27% does not enjoy reading, which ranks the Netherlands at the bottom four countries internationally (Meelissen et al., 2012). This has direct consequences for reading performance, as reading for enjoyment has subsequently been found to be related to reading comprehension scores, both in primary and in secondary education (Baker & Wigfield, 1999; Clark & De Zoysa, 2011; Guthrie et al., 2007a; OECD, 2010). Children's reading enjoyment generally declines as children get to the higher grades of primary school (McKenna, Stratton, Grindler, & Jenkins, 1995; Petscher, 2010). It is thought that this decline is related to a shift from "learning to read" to "reading to learn" (Chall, 1983; Katzir, Lesaux, & Kim, 2009), which puts more demands on children's reading skills as a means of acquiring information.

The main aim of this thesis is to examine different factors that are related to children's reading enjoyment and reading comprehension, in the context of both their home and their school environment: so-called "determinants". We focus on children from Grade 3 to 6 (age 7-13), because children in the upper

grades of primary school are expected to have passed the early stages of reading development and now should be “reading to learn”. Whereas younger children mostly depend on their parents who have to read books to them, older children’s exposure to books will depend much more on their own willingness to read independently. Do parents still play a role in their children’s reading engagement, for example by offering them a stimulating home environment with plenty of books? What is the role of teachers in this regard, and how can we best prepare pre-service teachers to become inspiring role models who encourage primary school children to read? To answer these important questions, the research that is described in this thesis examines both the role of parents and (future) teachers in order to understand the reading enjoyment of children in the upper grades of primary school. This thesis particularly aims to contribute to the area of reading research by approaching reading from a social, motivational, and neuropsychological point of view. Before describing the objectives of this thesis in more detail, this introduction will give a short overview of the theoretical background that was adopted and the current literature on this topic.

BACKGROUND

Reading Enjoyment Terminology

Many previous studies have taken aspects of children’s reading attitude and motivation as their focus. However, there is not much consensus among researchers about the operationalization of the various aspects, and often only implicit definitions are used (Conradi, Jang, & McKenna, 2014). In this thesis, the main focus is on reading enjoyment, i.e., experiencing the reading activity as inherently enjoyable (Retelsdorf, Köller, & Möller, 2011).

Reading enjoyment is often viewed as part of the broader construct of reading motivation, specifically intrinsic reading motivation (Guthrie & Wigfield, 2000; Sainsbury & Schagen, 2004). Intrinsic reading motivation refers to the willingness to read, because the reading activity itself is considered pleasurable. Extrinsic reading motivation on the other hand, is defined as reading for external reasons, such as receiving good grades in school (e.g., Schiefele, Schaffner, Möller, & Wigfield, 2012). Reading enjoyment is also closely related to the concept of reading attitude, which can be described as acquired predispositions (through social and personal beliefs, and previous experiences) to respond positively or

negatively to reading activities (e.g., McKenna, Conradi, Lawrence, Jang, & Meyer, 2012; Sainsbury & Schagen, 2004). Other aspects that are often considered dimensions of reading motivation are for example reading self-concept and reading task value. These are sometimes regarded as antecedents of reading motivation, because they refer to the expectancy to succeed in a reading task and to the value and significance of that reading task (Schiefele et al., 2012).

Reading Comprehension: Creating Mental Models

When trying to understand a text, readers create a mental representation of the situations, events, and people described in the text. That is, they do not store the literal text in their minds, but they create a situation model or mental model of the story (Glenberg & Langston, 1992; Johnson-Laird, 1983; Kintsch, 1988). This model is based on the explicitly mentioned information in the text (the surface level), the meaning represented by the text (propositional level), and the situations that the text refers to (situational level), which are described non-explicitly and which require deep-level processing (Kintsch, 1988; Schnotz, 2002). In addition, readers use their background knowledge to create a coherent situation model, which they update while reading the text (Glenberg & Langston, 1992; Kintsch, 1988; Schnotz, 2002; Zwaan & Singer, 2003).

Reading comprehension involves more than just understanding the literal meaning of individual sentences, but it requires readers to read “between the lines” and integrate information across sentences and throughout the text. Situation models aid this process of inferencing (Glenberg & Langston, 1992; Zwaan, 1999). It is thought that both pictures accompanying a text, i.e., “external” pictures, and visualizations in reaction to a text, i.e., “internal” pictures, can support mental model making. This is explained in more detail in the following paragraphs.

Multimedia Effect

It has repeatedly been shown that students learn and understand more from texts when pictures are added. This has been referred to as the multimedia effect (Mayer, 2002a, 200b). Pictures can facilitate mental model making, as they are “depictive” external representations, i.e., they show the content that they represent. As such, pictures can clarify structural relations between sentences to create the mental model accordingly (Eitel & Scheiter, 2015). Words, on the other hand, are “descriptive” representations, i.e., they are arbitrary symbols (Bartholomé & Bromme, 2009; Schnotz, 2002). Especially poor readers might

benefit from adding pictures to a text, because they can have problems constructing a mental model based on text alone. First, pictures can help readers to organize the written content by providing a context of the story. Second, pictures can serve as external support to keep important elements of the text active, while at the same time freeing processing capacity for other information that is needed to understand the text. Finally, pictures can help readers verify their text comprehension, for example by making relations in the text explicit and by resolving ambiguous information (Eitel & Scheiter, 2015; Glenberg & Langston, 1992; Levie & Lentz, 1982; Pike, Barnes, & Barron, 2010; Schnotz & Bannert, 2003). On the other hand, it has also been claimed that pictures can interfere with readers' mental models, when they are not in line with the written information (e.g., Levie & Lentz, 1982).

The combination of words and pictures is thought to result in deeper processing and therefore in an enhanced mental model (Bartholomé & Bromme, 2009; Schüler, Arndt, & Scheiter, 2015). There is no consensus yet on the way in which the integration of text and pictures takes place. According to some researchers, the processing of text and pictures takes place in two qualitatively different subsystems, which results in a verbal and a pictorial mental representation that are then merged (Mayer, 1997, 2002a, 2002b). This assumption is grounded in Paivio's dual coding theory. According to this theory, language is processed in a verbal subsystem, and pictures and mental images are processed in a non-verbal system, and these two subsystems are interconnected (Paivio, 2006). Other researchers assume that readers construct one mental model or situation model, based on both verbal and pictorial information. This results in a richer mental model (Schnotz, 2002; Schnotz & Bannert, 2003; Schüler et al., 2015).

Mental Imagery

In addition to external pictures that are added to a text, internal pictures that are created by the reader "in their mind's eye" can enhance the mental model of a text as well. That is, visual images that are created in reaction to the story text can lead to the creation of more coherent and enriched mental models, which contributes to reading comprehension (Mar, 2004; De Koning & Van der Schoot, 2013). Using mental imagery skills can be an effective strategy for concretizing abstract ideas from the text and connecting them to background knowledge (Algozzine & Douville, 2004; Bell, 1991; De Koning & Van der Schoot, 2013; Gambrell & Jawitz, 1993). It has been shown that students who are used to making mental images

while reading are generally better readers (Bell, 1991; De Koning & Van der Schoot, 2013; Hibbing & Rankin-Erickson, 2003; Snow, 2002).

Mental images are especially evoked by narrative texts, because these mirror the real human world, so that most readers can easily project themselves into this text genre or feel connected to it (Green, Brock, & Kaufman, 2004; Mar & Oatley, 2008). fMRI studies have even shown that reading about actions or events in a story leads to activation of the same brain structures as actually performing such actions or perceiving the events (Speer, Reynolds, Swallow, & Zacks, 2009). The processing of narratives therefore appeals for readers' mental imagery skills, both to create sensory images of the story ("make a movie in your mind"), and to infer what is in the characters' mind.

Mentalizing Skills

The ability to infer other people's mental state (e.g., needs, desires, feelings, beliefs, goals, purposes, and reasons) and to use this information to predict and explain their behavior has been referred to as mentalizing or theory of mind (Fletcher et al., 1995; Fonagy, 2006; Frith, Morton, & Leslie, 1991; Mar, Oatley, Hirsh, dela Paz, & Peterson, 2006). Early mentalizing skills start developing from the age of two (Frith & Frith, 2003), and can be stimulated by an encouraging home environment, for example by using mental state talk during shared reading interactions (Adrian, Clemente, & Villanueva, 2007; Adrian, Clemente, Villanueva, & Rieffe, 2005; Ensor, Devine, Marks, & Hughes, 2014; Symons, Peterson, Slaughter, Roche, & Doyle, 2005). Interestingly, individual differences in mentalizing skills can still be found in adulthood (Lecce, Bianco, Devine, Hughes, & Banerjee, 2014; Liddle & Nettle, 2006).

Mentalizing skills are not only used in the real world, but also when reading narratives, in order to infer the mental state of the story characters. Fictive narratives seem to function as some kind of simulation of the real world that takes place in the reader's mind. As such, fictive narratives can evoke processes such as mentalizing, empathy (i.e., understanding other people's emotions by feeling them yourself (De Vignemont & Singer, 2006)), identification, and emotional engagement (Djikic, Oatley, & Moldoveanu, 2006; Mar et al., 2006; Zunshine, 2006). Being able to understand the social and motivational aspects behind the characters' actions, which are often not explicitly stated in narratives, contributes to mental model making and therefore to story comprehension (Mar et al., 2006; Zwaan & Radvansky, 1998).

Home Literacy Environment

Children's home literacy environment is conceptualized as a variety of activities, resources, and attitudes (Phillips & Lonigan, 2009; Tichnor-Wagner, Garwood, Bratsch-Hines, & Vernon-Feagans, 2015; Yeo, Ong, & Ng, 2014). First, the home literacy environment is shaped by the literacy activities that parents engage in with their children, such as parent-child book reading, talking about books, and helping selecting books. Second, the amount of books available at home is considered children's "physical" home literacy environment, because the presence of many books will give children more opportunities to experience and enjoy reading. Finally, parents' own reading enjoyment, habits, and beliefs contribute to the home literacy environment as well (e.g., Burgess, Hecht, & Lonigan, 2002; Bus, Van IJzendoorn, & Pellegrini, 1995; De Jong & Leseman, 2001; Katzir et al., 2009; Van Steensel, 2006; Yeo et al., 2014).

A rich home literacy environment has repeatedly been associated with a better performance on a variety of language and reading tasks, including reading comprehension (e.g., Bus et al., 1995; Mol & Bus, 2011). In addition, children who grow up in a home environment in which reading and literacy activities are promoted and in which reading is positively valued generally enjoy reading more (e.g., Baker & Scher, 2002; DeBaryshe, 1995; Yeo et al., 2014). For example, positive effects on children's reading enjoyment are expected when parents engage in positive affective parent-child reading interactions (Sonnenschein & Munsterman, 2002; Yeo et al., 2014). This is also the case when parents read a lot themselves and express their own reading enjoyment, in other words, provide a positive reading example to their children (e.g., Baker & Scher, 2002; Yeo et al., 2014). Finally, an encouraging home literacy environment, in which parents and children discuss the characters' thoughts and emotions during book reading interactions can contribute to the development of children's mentalizing skills (Adrian et al., 2005, 2007; Ensor et al., 2014; Symons et al., 2005).

Importantly, the benefits of a rich home literacy environment are not limited to preschoolers and kindergartners, who are dependent of the support of their parents to engage in literacy activities. It has been shown that parents remain an important factor in supporting their children's reading during later childhood and adolescence (Klauda, 2009).

The School Context

As children in the upper grades of primary school spend a considerable amount of time at school, their teachers play an important role in encouraging children's reading enjoyment and comprehension as well. Interestingly, teachers' own reading enjoyment has been shown to affect the quality of their literacy teaching. That is, teachers who enjoy reading themselves and who choose to read during leisure time have been shown to use more classroom practices that effectively promote their students' reading enjoyment (McKool & Gespass, 2009; Morrison, Jacobs, & Swinyard, 1999). These teachers can serve as a positive reading role model by demonstrating their own love of reading to their students (Gebhard, 2006; Nathanson, Pruslow, & Levitt, 2008). Therefore, children who attend literacy-rich classrooms, in which reading is valued positively will be more likely to enjoy reading. According to the model of reciprocal causation (Mol & Bus, 2011; Stanovich, 1986) this will have positive consequences for their reading comprehension as well.

Children's reading enjoyment can also be affected by teacher perceptions. Teacher perceptions of their students' abilities are thought to be reflected in their behavior towards their students. When teachers express negative beliefs and expectations of their students' reading comprehension, this might lead children to develop accordingly, i.e., show poorer reading performance than might be expected based on their capabilities (Hoge & Coladarci, 1989; Südkamp, Kaiser, & Möller, 2012). In addition, these children might develop a negative reading attitude and motivation (Jussim, 1989; Urhahne, 2015). In sum, both teachers' own reading enjoyment and reading habits, and their perceptions of their students' reading comprehension skills might be related to children's reading enjoyment and reading comprehension.

THESIS OUTLINE

Aims

This thesis examines the possible determinants of individual differences in primary school children's reading enjoyment and comprehension from a multidimensional point of view. First, individual differences in child variables, such as their reading attitude, mentalizing skills, and mental imagery skills are considered (Chapter 2, 5, and 7) in order to shed more light on the various factors

that are involved in encouraging children to enjoy reading and the aspects that contribute to comprehension. Second, the relation between children's home literacy environment and their reading enjoyment and comprehension is examined (Chapter 3, 4 and 5). Finally, the school context is involved as well in this thesis, as (future) teachers play a role in enhancing children's reading enjoyment and comprehension (Chapter 2 and 6).

Approach

In order to achieve the aims, four different studies were conducted. First, the data for Chapter 2 were collected in six fifth- and sixth-grade classrooms. The children self-reported their reading motivation by completing a questionnaire, and their teachers rated their reading comprehension. Second, the data for Chapter 3, 4 and 5 were derived from a large survey study among the parents of third to sixth graders. In Chapter 3 and 5, interview data of a subsample of third and fourth graders were also included. Third, the survey data for Chapter 6 were collected at two moments during pre-service teachers' first year at university in order to examine change following their first semester. Finally, Chapter 7 presents a quasi-experimental study on the mental imagery skills of fifth graders.

Chapter Overview

Chapter 2 investigates whether teacher perceptions of their students' reading comprehension skills play a role in students' reading motivation. Specifically, we examined the reading attitude, reading self-concept, and reading task value of 160 fifth and sixth graders and we differentiated between boys and girls.

Chapter 3 examines the home literacy activities that 452 parents of third to sixth graders engaged in. In addition, it was examined whether parents adjusted the frequency of the home literacy activities to their own reading enjoyment and reading behavior, and to their perceptions of their children's reading enjoyment and behavior. A subset of children from Grade 3 and 4 self-reported their reading enjoyment in order to examine whether engaging in home literacy activities actually predicted children's reading enjoyment.

Chapter 4 examines the home literacy environment of 389 third to sixth graders, this time in relation to the educational expectations of parents for their children and parents' beliefs about reading for active citizenship. It is specifically examined

whether mothers who consider reading a means to develop children's social and moral competences have higher educational expectations and offer a higher-quality home literacy environment.

Chapter 5 investigates the relation between children's home literacy environment and their reading comprehension. It is examined whether children's print exposure, and two higher-order skills, i.e., mentalizing and expressive verbal ability, are involved in explaining this relation. The sample consists of 117 children from Grade 3 and 4 who participated in individual test sessions.

Chapter 6 investigates the reading enjoyment of 152 first-year pre-service teachers in relation to the quality of their teaching. The pre-service teachers responded to a questionnaire at the start of their teacher education and after their first semester at university. The responses of the enthusiastic readers are compared to those of their non-enthusiastic peers.

Chapter 7 looks into the relation between children's mental imagery skills and their ability to integrate information from pictures with textual information. A total number of 150 fifth graders read one of three parallel versions of the first chapter of a children's narrative: (1) an experimental version with pictures replacing part of the text; (2) a version with text and additional pictures, and (3) a version with only text. It was examined whether differences in mental imagery skills play a role in understanding these versions.

Chapter 8 presents an overview of the main conclusions from this thesis. Furthermore, suggestions for future studies and practical implications are discussed. Finally, an intervention is presented that was carried out by pre-service teachers. This illustrates the implications of our findings for an educational setting in which children's reading enjoyment and reading comprehension are promoted.

