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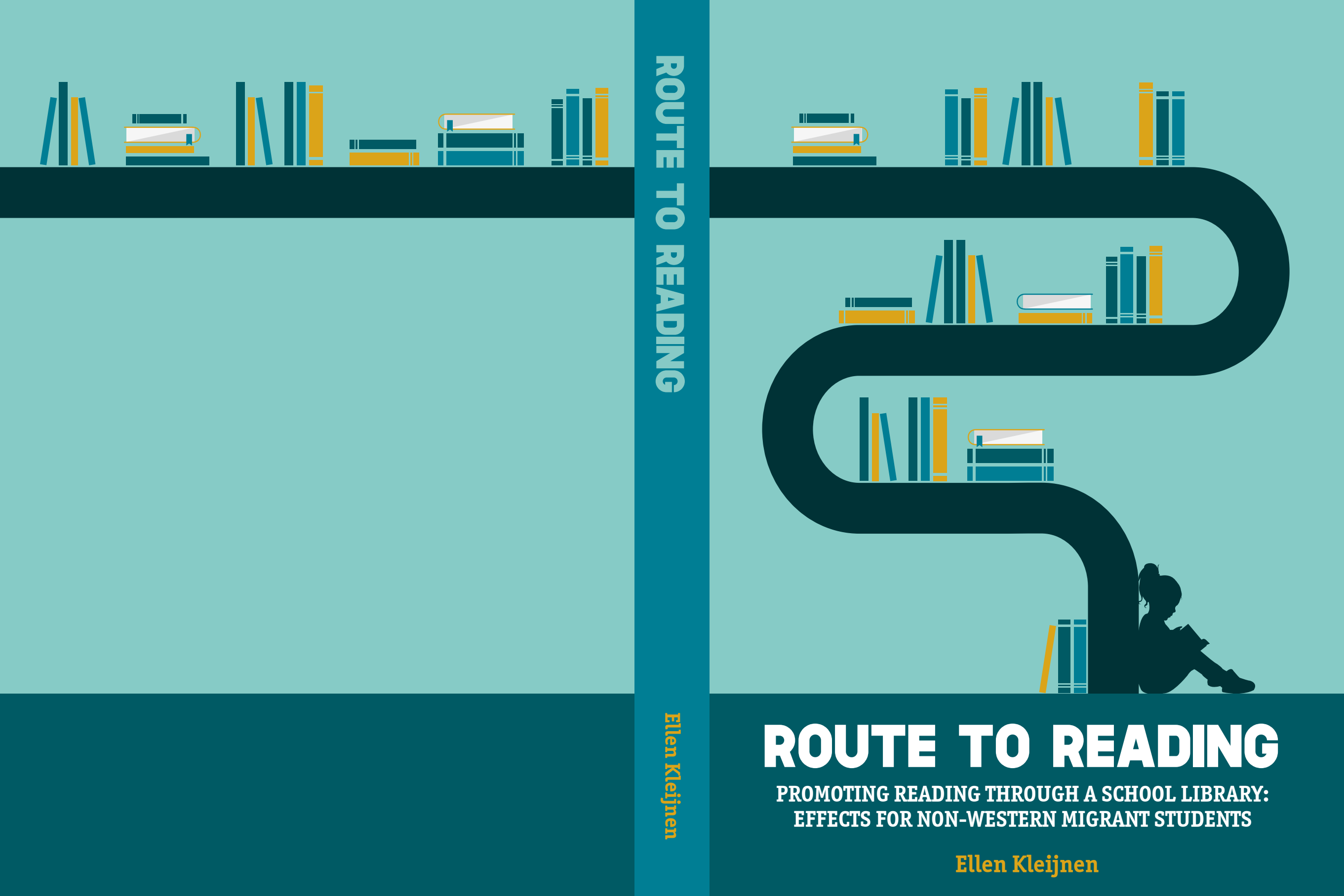
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ROUTE TO READING

Ellen Kleijnen

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EFFECTS FOR NON-WESTERN MIGRANT STUDENTS

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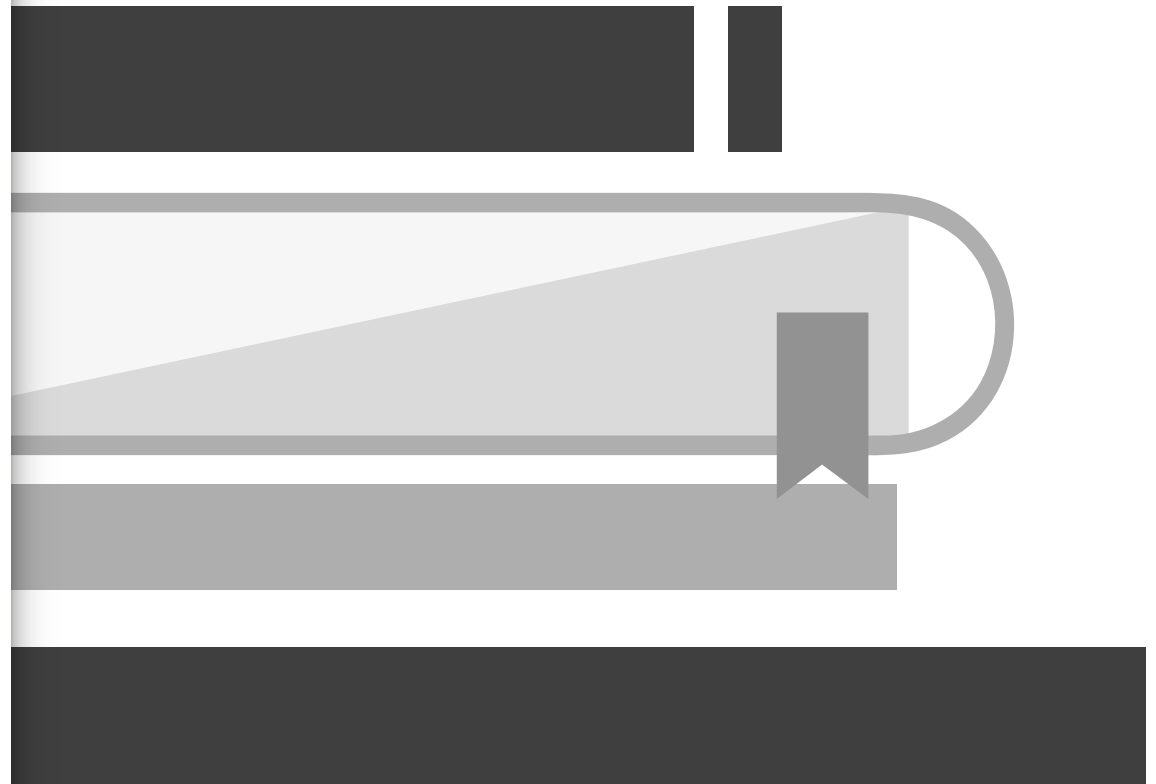
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CHAPTER 1

GENERAL INTRODUCTION





Ethnic inequality in school performance is an urgent issue in the Netherlands, as in other Western countries (Gijsberts & Iedema, 2012; Schnepf, 2007). Since the 1960s, migrants have come to the Netherlands in large numbers (Herweijer, 2009; Nicolaas, Loozen & Annema, 2012). Recent statistics show that in 2015, the Dutch population counted over 2.0 million non-Western migrants,¹ or 12% of the total population, of which migrants with a Turkish, Moroccan, Surinamese, and Antillean background constituted the largest groups (Statistics Netherlands, 2015). Along with the arrival of migrants, schools with a considerable number of students with a migrant background have become more common over the past decades, especially in the most highly urbanized areas (Herweijer, 2008). In 2015, 17% of the primary school aged children (4-12 years) were of non-Western origin (Statistics Netherlands, 2015). Research has clearly demonstrated that the educational achievement of children from non-Western migrant groups – including those born in the Netherlands – lags behind that of native Dutch students, especially when it comes to language and reading skills (Gijsberts & Iedema, 2012; Ledoux, Roeleveld, Driessen, Cuppen, & Meijer, 2011). Their disadvantages are already present at the start of primary education and continue throughout primary school and beyond (Gijsberts & Iedema, 2012; Herweijer, 2009).

ART OF READING: LIBRARY AT SCHOOL

In 2008, a national program called *Art of Reading* (“Kunst van Lezen”) was initiated by the Ministry of Education, Culture, and Science to promote a culture of reading among children (0-18 years) nationwide (Broekhof, 2015). Art of Reading is based on four pillars: (a) reading environment (providing an adequate collection for the target group), (b) expertise (investing in competence of staff working at libraries, schools, and childcare centers), (c) evidence (providing brochures, scientific research, and monitoring), and (d) cooperation (establishing strategic collaborations to accomplish a sustainable execution of programs; <http://kunstvanlezen.nl>). Apart from the program *the Library at School* (“de Bibliotheek op School”), which we focus on in our research, the Art of Reading initiative also includes the program *BookStart* (“BoekStart”) for 0- to 4-year-olds, aimed at promoting early reading, storytelling, singing songs, and rhyming through baby books, as well as a program that aims to create regional reading promotion networks (Broekhof, 2015; Bron & Langendonk, 2015; van den Berg, 2015). With these programs, Art of Reading seeks to raise children’s reading and language ability through stimulating free reading and reading aloud to children, making sure that the promotion of reading is anchored permanently and on an extensive scale in the policy of libraries, schools, municipalities, childcare centers, and centers for youth and family (Bron & Langendonk, 2015; Langendonk, 2015). Public libraries take the lead in implementing the programs (Langendonk, 2015; Ros, 2010; van Mil, Kandel, Mulder, & Polderman, 2015). In the period 2008-2015, the Art of Reading program received a budget of EUR 20 million and was carried out by the Dutch Reading Foundation and The National Library (Broekhof, 2015; Bron & Langendonk, 2015; Stichting Lezen, 2012).

The program the Library at School, which comprises a structural cooperation between public libraries and schools, seeks to promote reading among students by creating high quality libraries in schools and improving the collaboration between public libraries and schools (Broekhof, 2015; Bron & Langendonk, 2015; van Dam & Heideman, 2015). The program is directed at promoting reading enjoyment, encouraging children to read more, stimulating the students’ reading and language development, and improving their information skills (Bron & Langendonk, 2015; Huysmans, Kleijnen, Broekhof, & van Dalen, 2013; van Dam & Heideman, 2015). Its main priority is to provide students of all grades with a large, varied, and up-to-date collection in a school library, as most Dutch schools have a limited and unattractive book collection at their disposal (Ros, 2010; van Dam, Klerk, Langendonk, & Plooi, 2015). As part of the program, a reading and media consultant employed by the public library supports the school by, for instance, helping with setting up the school library, assisting students in finding books and information, providing teachers with advice, and implementing reading promotion activities (Huysmans et al., 2013; van Dam et al., 2013). Although the Library at School is a national program consisting of certain building blocks, how it is given shape depends on the local situation, wishes, and needs (Thomas, 2013). The objectives and activities are specified on a yearly basis by the school and the library involved (van Dam et al., 2013).

Also as a result of the Library at School, school libraries supported or run by public libraries have become increasingly common in the Netherlands. In 2014, 74% of all library organizations participated in the program, involving more than one third (36%) of all Dutch primary schools (Bron & Langendonk, 2015; van Dam & Heideman, 2015; van Dam et al., 2013). Although the initial focus of the program was on primary schools, since 2014, pilot studies have been conducted to extend the Library at School program to childcare centers and secondary education (Broekhof, 2015).

The present research project contributes to the scientific research carried out in light of the Art of Reading initiative. The two earlier dissertations, addressing BookStart (van den Berg, 2015) and the Library at School (Nielen, 2016), have shown encouraging outcomes of the national program. Van den Berg (2015) provided evidence for a causal relationship between BookStart and language development in 15- and 22-month-old children. Temperamentally reactive children, who are more prone to anger and frustration during daily activities, appeared to be particularly receptive to BookStart. Their parents were also more likely to participate in BookStart, suggesting that parents who notice less optimal interactions with their child look for a program that can offer advice and help. However, parents from a low educational background were less inclined to participate in BookStart, even when their interaction with their child was problematic. From the research by Nielen (2016) it appears that an enriched school library – including a larger and more up-to-date book collection as compared to regular school libraries – seems beneficial for students’ performance. He found that fourth and fifth grade students from schools with an enriched school library attained higher reading comprehension scores than students attending schools with a typical school library.



Students from schools with an enriched school library also had more interest in reading and knew more book titles, which may explain why these students were more proficient readers.

MEASURING THE IMPACT OF (SCHOOL) LIBRARIES

There is a growing need for Dutch public libraries to prove their value. The economic recession following the credit crunch in 2008, resulting in public spending cuts on the municipal level, has caused governments to question the self-evidence of investments in public libraries (Huysmans & Oomes, 2013; Vakkari, Aabø, Audunson, Huysmans, & Oomes, 2014). Moreover, due to the digitization of media, information, and communication, the library's function and benefits available through the use of library services are questioned (Huysmans & Oomes, 2013; Poll, 2012). Huysmans and Oomes (2013, p. 2) have stated that "libraries are therefore more and more urged to document their value and demonstrate their relevance to citizens, commentators, and politicians". In addressing the relevance of public libraries for Dutch society much attention has been paid to the so-called *outputs* of the library, such as number of branches, opening hours, number of users, materials, visits, and loans (Huysmans & Oomes, 2013). However, these measures do not give sufficient insight into the value of the library to the user and the impact on one's life. Increasingly, libraries are looking for measures of so-called *outcomes*, such as changes in behaviors, attitudes, and skills through library services, trying to get a grip on the benefits libraries produce to its users (Huysmans & Oomes, 2013; Vakkari et al., 2014).

According to the International Federation of Library Associations and Institutions (IFLA), evaluation is also a critical aspect of implementing school library programs. Evaluation of school library programs and services demonstrates the benefits derived from the libraries and it helps to determine whether a school library meets the needs of the school population. Moreover, evaluations provide evidence needed to improve school library programs, leading to the renewal or development of new programs (Schultz-Jones & Oberg, 2015). Although ample studies – mostly conducted outside the Netherlands – have addressed the impact of school libraries, revealing positive outcomes (e.g., Nielen, 2016; Roberson, Schweinle, & Applin, 2003; Scholastic, 2008; Williams, Wavell, & Morrison, 2013), there is still a lack of clarity as to the *effects on children from migrant groups in the Netherlands*.

PRESENT RESEARCH

This research aims to investigate whether the integration of a library facility in a Dutch primary school's curriculum leads to a more positive attitude toward reading, more leisure reading, and better reading and language skills in students with a non-Western migrant background. Reading promotion through a school library seeks to stimulate these factors and previous studies have demonstrated positive effects for students in general. In this project, we specifically focus on the effectiveness of a school library facility for migrant children from non-Western families. As part of

our research, we have first conducted a literature review in order to pinpoint what is known and what is as yet unknown about the effects of reading promotion efforts through school libraries for children in general, and children with a migrant background in particular. This review has identified gaps in the literature and has provided guidance for our empirical studies.

Central in the empirical part of this research was a children's library in Oosterwei, a multicultural neighborhood in the city of Gouda in the west of the Netherlands. In 2012, Oosterwei had over 2,100 residents of which a high proportion was classified as non-Western migrant (60%), mostly of Moroccan origin (<https://gouda.incijfers.nl>). In agreement with national statistics, migrant students in this neighborhood often suffer educational disadvantages, especially in terms of language and reading ability. On the local public library's initiative, the children's library was established in a primary school in Oosterwei in September 2011, using external funding. This library, joining the Library at School concept, was run by a reading and media coach employed by the public library. It provided the students with a large and varied collection of books as well as reading promotion lessons given by the employee (see Appendix A). The school library was established in the belief that it would contribute to more reading behavior, a more positive reading attitude, and, ultimately, better language and reading skills. As the public library of Gouda evidently could not be certain that these expected effects would come about, the present research project was undertaken. It should be noted that the situation in Gouda – a multicultural neighborhood or school confronted with learning disadvantages in many non-Western migrant students – is not an isolated case, as this is often observed in the Netherlands, in particular in highly urbanized areas.

In the present research project, a longitudinal study with a quasi-experimental design was conducted, involving two Dutch primary schools in Gouda: the one with the integrated library facility (i.e., the experimental school), and another school in an adjacent multicultural neighborhood without such a school library (i.e., the control school). Standardized tests and questionnaires were used to gather data over three successive school years: 2011/2012, 2012/2013, and 2013/2014. The total sample consisted of 143 students (experimental school $n = 72$; control school $n = 71$), with one to three observations on reading attitude and reading behavior, and/or up to six observations on one or more aspects of language and reading proficiency. All students included in the sample had at least one parent from a non-Western background and the vast majority of students was born in the Netherlands. Due to the limited number of Western migrant students attending the two schools and the limited number of native Dutch students attending the experimental school, it was not possible to compare the non-Western migrant students with native Dutch and Western migrant students. Thus, our focus is exclusively on students from non-Western migrant families. The main research questions addressed were as follows:

1. Does a school library have an effect on the *reading attitude* of non-Western migrant students?



2. Does a school library have an effect on the *reading behavior* of non-Western migrant students?
3. Does a school library have an effect on the *reading and language proficiency* (i.e., vocabulary level, reading comprehension skills, and spelling skills) of non-Western migrant students?
4. Is there a *relationship between the reading attitude, reading behavior, and language and reading skills* in students with a non-Western background?

SCIENTIFIC AND SOCIETAL RELEVANCE

Answering our research questions is relevant from both a scientific and a societal perspective. Researchers from different scientific disciplines have already addressed issues related to our subject of study, as will be discussed in the next chapters. For instance, in the field of library and information sciences, many school library impact studies have been carried out, mostly conducted outside the Netherlands, and there is a debate going on about the societal value of public libraries, which increases the need for exposing the societal benefits of libraries. The socializing role of libraries and schools has also been discussed in the field of sociology, along with the role of parents as (reading) socializing agents, especially in terms of the reading climate at home. Furthermore, in linguistics, attention is paid to (second) language acquisition, which plays a role for students from migrant groups who are (partly or entirely) raised in another language than the Dutch language. Relationships between reading attitudes, reading behavior, and language and reading proficiency are mainly studied in the field of reading research, educational research, and psychology. Despite the bulk of research already carried out, there are still gaps in the literature that need to be filled.

As mentioned earlier, in the Netherlands, there is still a lack of clarity as to the effects of the integration of a library facility in a school for children with a non-Western background. Most studies on the effectiveness of school libraries, often focusing on gains in student learning in relation to school library characteristics, have been carried out outside the Netherlands and have not addressed ethnic differences. Findings from research conducted abroad cannot necessarily be considered valid to the Dutch situation (Veenstra, 1999), not only because the implementation of school library programs, such as the role of the school librarian, can differ (Brabantse Netwerk Bibliotheek, 2013), but also because the migrant groups in the Netherlands are not readily comparable with ethnic minorities in countries such as the United States. For example, the primary language of the majority of Moroccan-Dutch families is Berber, which, until recently, was a non-scripted language (Scheele, 2010), which is an entirely different situation compared to those of African Americans and Hispanics in the United States. Furthermore, little is known about the relationships between the factors targeted by reading promotion through a school library, that is, reading attitude, reading behavior, and reading and language skills, among migrant students in

particular. Thus, by investigating the effects of a school library concept in a Dutch primary school on the reading attitude, reading behavior, and reading and language skills in students with a non-Western background, and by gaining more insight into the relationships between these factors among these children, this research project contributes to bridging a gap in the research literature in several scientific disciplines.

By eliminating these gaps, more effective policies and practices around reducing educational inequalities through reading promotion can be conceived as well, which brings us to the societal relevance of this research. Providing equal opportunities for young people and combatting learning disadvantages are important objectives in Dutch education policy (Herweijer, 2009; Roeleveld, Driessen, Ledoux, Cuppen, & Meijer, 2011). At state level, the Ministry of Education, Culture, and Science is primarily responsible for the education policy aimed at the integration of students with a migrant background (Herweijer, 2009). The primary focus of the Dutch educational disadvantage policy is on primary education (Herweijer, 2009; Roeleveld et al., 2011). An important part of the policies aimed at improving the achievements of children from disadvantaged families is a 'weighting system', introduced in the 1980s. In calculating the schools' budget, a greater weight is assigned to students whose parents have a low or very low educational level (Herweijer, 2009). Although, as of the year 2006, ethnic origin no longer plays a role in this extra funding for schools, students assigned a student weight relatively often have a migrant background (Statistics Netherlands, 2016). More recently, educational disadvantage policy has focused on preschool and early-school education, aiming at stimulating the development of young children from deprived backgrounds, including many migrant children (Herweijer, 2009). In 2015, the Netherlands, including the Dutch education system, was confronted with many people entering the country who did not master the Dutch language, as large groups of asylum-seekers, mainly from civil-war-torn Syria, have sought to find safety in Europe (Boelhouwer, Kraaykamp, & Stoop, 2016). The large number of refugees gave rise to much debate around immigration and integration. The Netherlands Scientific Council for Government Policy have stressed the importance of making integration a key objective from the start of the asylum procedure, of which language acquisition is an important aspect (Engbersen et al., 2015). Refugee children are entitled and obligated to participate in the Dutch education system (Government of the Netherlands, n.d.). Obviously, these children, just like many migrant children already living in the Netherlands, fall behind in their Dutch language skills. Our research can therefore also be of interest to educational institutions and libraries working with these groups of students.

The present research project sheds light on the effectiveness of an integrated school library facility for non-Western migrant children – albeit mainly second generation migrants born in the Netherlands –, indicating whether this can be an effective tool in reducing learning disadvantages among these students, and thereby enhancing their chances as participants in the job market, as citizens, and as individuals. Moreover, effects on the students' reading attitude are also studied,



as well as effects on their reading behavior, an important activity which can, apart from its possible influence on reading and language skills, contribute to, for instance, gaining knowledge about the world and the development of social skills (Heideman, 2015). Although the empirical studies revolve around two schools in the city of Gouda, schools and libraries throughout the country can benefit from the outcomes, as there are many other Dutch schools with similar populations. Overall, this research contributes to the empirical foundation of governmental policy around inequalities in school performance, reading promotion, and public libraries, and it will provide implications for future research and practice, leading to more effective reading promotion efforts.

OVERVIEW OF THE CHAPTERS

Chapter 2 constitutes a literature review which pinpoints what is known and what is as yet unknown about reducing learning disadvantages among children in general, and children from a migrant background in particular, through school libraries. Apart from literature on the correlation between leisure reading and school performance, this chapter discusses literature on the effectiveness of reading promotion efforts by parents, schools, public libraries, and school libraries in particular on the students' reading attitude, reading behavior, and school performance. It concludes with directions for research, providing guidance to our empirical studies discussed in the next chapters.

Our first and second research question are addressed in Chapter 3, which examines whether a school library has an effect on the *reading attitude and reading behavior* of non-Western migrant students. This chapter also describes whether these effects differed for categories of gender, age, parental educational level, and reading climate at home.

Chapter 4 aims to investigate whether an integrated library facility in a primary school leads to better *reading and language skills* in students with a non-Western migrant background, addressing three important skills: vocabulary, reading comprehension, and spelling. It also explores whether the effects differed for categories of gender, age, parental educational level, reading climate at home, and language spoken with parents. This chapter focusses on the third research question.

Chapter 5 addresses the fourth research question by examining whether there is a *relationship between the reading attitude, reading behavior, and language and reading skills* in students with a non-Western background, and, if existent, whether these relationships hold after controlling for background characteristics.

Finally, Chapter 6 summarizes the main findings of the research project and discusses limitations, directions for future research, and practical implications.

The appendices provide background information on the research project. Appendix A gives a description of the school library central in our longitudinal study. Appendix B elaborates on the method, paying attention to the design, procedure, participants, and measurement instruments, whereas Appendix C discusses the two schools involved in the study. Given that the empirical

chapters are based on journal articles, these chapters also pay attention to the school library, method, and schools, resulting in some overlap with the appendices which, however, contain more detailed information for the interested reader.

Notes

1. According to Statistics Netherlands a person is considered migrant, also referred to as *allochtonous*, if at least one parent was born outside the Netherlands. Thus, migrant groups also include persons who were born in the Netherlands themselves, called *second generation migrants*. A distinction can be made between migrants originating from Western countries (Europe [excluding Turkey], North America, Oceania, Indonesia, and Japan) and migrants coming from non-Western countries (Turkey, Africa, Latin America, and the rest of Asia; Alders, 2003).

CHAPTER 2

THE ROLE OF SCHOOL LIBRARIES IN REDUCING
LEARNING DISADVANTAGES IN MIGRANT CHILDREN:
A LITERATURE REVIEW





ABSTRACT

The educational achievement of children from non-Western migrant families in the Netherlands and other Western countries lags behind that of natives, especially when it comes to language proficiency and reading ability. This literature review pinpoints what is known and what is as yet unknown about reducing learning disadvantages through school libraries in order to point to directions for future research. A considerable body of research has shown that school libraries are positively related to learning outcomes in children, as well as to their reading behavior and attitude toward reading, factors that are often found to correlate positively with reading and language skills. However, on the basis of existing research it is hard to draw firm conclusions about the effects of school libraries on students from migrant families in particular. This chapter indicates that future research should explicitly focus on the impact of school libraries' reading promotion efforts on the reading behavior, attitude toward reading, and reading and language skills of migrant students, leading to more effective educational policies.

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Good language skills and reading proficiency are important for participating successfully in modern society (Johnsson-Smaragdi, 2006; National Endowment for the Arts [NEA], 2007). However, it is evident that not every child sufficiently masters these skills. If we consider, for instance, the situation in a highly developed Western country like the Netherlands, approximately a quarter of the students finish primary school with insufficient technical reading proficiency, which in turn negatively affects their reading comprehension skills (Vernooy, 2009). In fact, there are categories of children who in particular face difficulties in developing good language and reading skills. An urgent issue – typically observed in many Western countries with non-Western migrant groups – that provides a case in point is the ethnic inequality in school performance (Gijsberts & Iedema, 2012; Schnepf, 2007).

Since the 1960s, migrants have come to the Netherlands in large numbers (Herweijer, 2009). Statistics show that in 2015, the Netherlands counted more than 1.6 million Western migrants and over 2.0 million non-Western migrants,¹ making up 9.6% and 12.1% respectively of the total population. Turkish and Moroccan migrants constitute the largest non-Western migrant groups, followed by Surinamese migrants and people of Dutch Antillean origin (Statistics Netherlands, 2015). In line with the migration flows, multiethnic schools and schools with a high percentage of migrant students (especially in the largest cities) have become more common in the Netherlands over the last decades (Herweijer, 2008). In 2015, about 17% of the primary school aged children (4-12 years) were of non-Western origin (Statistics Netherlands, 2015).

The situation of migrant students differs in several respects from that of their indigenous counterparts. First of all, migrant children are often partly or even entirely raised in another language. Accordingly, many migrant children have to acquire both the minority language of their cultural community and the Dutch language (Scheele, 2010). Another important difference is that the socioeconomic position of migrant families is usually weaker, as expressed by their lower education level, higher unemployment rate, and lower income compared to native Dutch families (Herweijer, 2009). In addition, it has been suggested that parents from migrant groups in the Netherlands are generally less often involved in their children's education (Herweijer & Vogels, 2004) and that the socialization in migrant families more often creates characteristics and expectations among children that run counter to what is valued in formal schooling (Elbers, 2002). Overall, the situation of many migrant families puts ethnic minority students at higher risk for poorer school performance (Gijsberts & Herweijer, 2009).

Research has clearly demonstrated that the educational achievement of children from non-Western migrant groups in the Netherlands falls behind, especially when it comes to language and reading ability (Gijsberts & Iedema, 2012). As reported by Herweijer (2009), language deficiencies among migrant students are already manifest at the start of primary school.² Herweijer demonstrates that in kindergarten, children from non-Western migrant groups not only lag behind native Dutch students whose parents have a secondary or higher education background, but also – albeit to



a lesser extent – relative to native children from families with a low education background. The language disadvantages of migrant students are much more pronounced than their disadvantages in arithmetic, which makes fewer demands on their language skills (Herweijer, 2009). Although the language proficiency of non-Western migrants at the start of primary school has improved over the years, there is still a considerable gap with their native peers (Gijssberts & Iedema, 2012).

The initial learning disadvantage among migrant students continues throughout their school career (Herweijer, 2009; Meelissen et al., 2012). Differences between the various migrant groups and native Dutch students are still evident in the last year of primary school, particularly in language proficiency (Gijssberts & Herweijer, 2009). At the end of primary school, Turkish-Dutch, Moroccan-Dutch, and Antillean-Dutch students have a language disadvantage of approximately two years on average (Herweijer, 2009). On a more positive note, studies comparing different cohorts have indicated that the language disadvantages of migrant children in sixth grade have diminished over time. Still, it is a relatively slow process and upon finishing primary school, non-Western migrant students continue to be educationally disadvantaged (Driessen & Merry, 2013; Gijssberts & Iedema, 2012).

Given the crucial role of good language and reading skills, it is important to combat the learning deficiencies in migrant children. Reducing educational disadvantages is suggested to go hand in hand with reading promotion efforts (Hermans, 2002). In the Netherlands, most primary schools and public libraries cooperate when it comes to reading promotion, and school libraries supported or run by public libraries have become increasingly common (Kasperkovitz, van Tits, & von der Fuhr, 2009; Oberon, 2009, 2011). The ultimate objective of the collaboration between schools and libraries is enhancing the students' language development (Huysmans, Kleijnen, Broekhof, & van Dalen, 2013). Considering the investments involved and the importance of reducing educational disadvantages, it is relevant to have insight into the effectiveness of reading promotion efforts by school libraries in the Netherlands.

Although ample studies have addressed the impact of school libraries, there are also gaps in the literature that need to be filled. By identifying and eliminating these gaps, more effective policies targeted at reducing ethnic inequality in school performance can be conceived. Therefore, the *aim* of this contribution is to point to directions for future research into the effectiveness of school libraries in reducing learning deficiencies in migrant children.

For this purpose, a literature study has been conducted casting the net rather widely. Besides paying attention to research that explicitly addresses the influence of school libraries on the educational achievement of (migrant) students, other literature that indirectly sheds light on this subject was included. For instance, because school libraries are aimed at reading promotion, studies on the relationship between reading behavior and school performance are discussed as well. The study is also concerned with what is known about the effectiveness of reading promotion efforts by parents, schools, and public libraries, given that school libraries function amid these other

pedagogical agents. Moreover, this contribution also describes findings from research on children in general, because little research explicitly focuses on students with a migrant background.

In this literature review, the contribution of school libraries in reducing ethnic inequality in school performance is described and analyzed primarily for the Dutch situation. Realizing that conditions for ethnic groups vary from group to group and from country to country, which undermines the generalizability of findings, it was deemed wise to make an in-depth study of one country rather than assume that findings from various nations and continents can be integrated into a coherent whole with general validity. Nevertheless, the evidence presented here can within reasonable boundaries be generalized to other Western countries with the same or similar ethnic groups. Also, research and policy implications provided in the "Discussion" section will be more widely applicable.

The *main research question* of this chapter is as follows: What is known and what is as yet unknown about reducing learning disadvantages among children in general, and children from a migrant background in particular, through school libraries in the context of other pedagogical agents (i.e., parents, schools, and public libraries)?

This main question can be divided into four *sub-questions* that concern both children in general and migrant children:

1. What is the correlation between leisure reading and school performance?
2. What is known about the effectiveness of reading promotion efforts by parents, schools, and public libraries on reading attitude, reading behavior, and school performance?
3. What is known about the effectiveness of reading promotion efforts by school libraries on reading attitude, reading behavior, and school performance?
4. What directions could future research take to help policy enhance the contribution of school libraries in reducing learning deficiencies?

METHOD

To answer these questions, we searched for literature on the relationship between leisure reading and school performance as well as for literature that addressed the effects of reading promotion efforts by parents, schools, public libraries, and school libraries on students' reading attitude, reading behavior, and school performance. Our initial focus was on literature about migrant students in the Dutch context, yet we also searched for studies that addressed children in general and/or studies conducted outside the Netherlands. The findings primarily describe the situation in the Netherlands, although within reasonable assumptions they can be regarded as indicative for migrant groups in comparable developed Western countries as well.

Literature was searched for through a library discovery tool accessing various electronic databases (most importantly ScienceDirect, CrossRef, ERIC, LexisNexis Academic, Emerald, PsychINFO, and JSTOR), and through search engines (Google Scholar and Google), using varying



combinations of keywords in both Dutch and English.³ We also located potentially relevant papers by scanning the reference sections of papers already identified and by searching through the publications of organizations that address topics related to the focus of our review (e.g., Organisation for Economic Co-operation and Development [OECD], Stichting Lezen (Dutch Reading Foundation), and National Literacy Trust). This search strategy identified a wide range of sources such as articles in peer-reviewed journals, chapters in edited books, dissertations, and research reports. From this gross list, we selected those sources that, judged from the abstracts, could explicitly or implicitly contribute to answering our research questions.

It should be noted that the studies discussed here vary considerably in the research methods used, having consequences for the value that can be attached to their results. For example, reading and language skills are mostly assessed through tests, whereas some studies conducted in this area use questionnaires to gain insight into the respondents' skills. The self-reported data can be seen as less valid than those obtained by administering tests (Poll, 2012). Furthermore, as reading attitude is not directly observable (Alwin & Krosnick, 1991), this construct is typically assessed using questionnaires. Reading behavior is also often measured via self-reports. Yet it is not certain that the children's answers completely cover their actual reading behavior or attitude, as bias may occur caused by factors such as social desirability, unclear instructions, and vague wording of the questions and response categories (Pouwer, van der Ploeg, & Bramsen, 1998). Another instrument used for assessing reading behavior is a print exposure checklist or a title recognition test that measures familiarity with book titles and authors or magazines (Cunningham & Stanovich, 1998; Mol & Bus, 2011b). This instrument provides an index of relative differences in reading volume and it is considered more objective than self-report questionnaires (Cunningham & Stanovich, 1998). Apart from the type of instrument used, other methodological characteristics such as the sample and the operationalization of the measured constructs may have affected the research outcomes. In the remainder of this chapter, the methods used in former studies are mentioned as much as possible so the reader can take some note of the quality of the discussed research.

RESULTS

READING BEHAVIOR AND SCHOOL PERFORMANCE

Given the relevance of good reading proficiency and language ability, it is important to reduce disadvantages in this area among migrant children. To overcome, for instance, a vocabulary disadvantage of 2,000 words in the first school years, non-Western children in the Netherlands should learn 3,000 Dutch words (i.e., 1,000 to not fall further behind – because their native Dutch peers will learn new words as well – and 2,000 words to bridge the gap). If this is supposed to happen during one school year, these students should learn 75 new words a week. However, with intentional vocabulary learning at school, on average just 25 new words are learned on a weekly basis, which is by no means sufficient for children of non-Western origin to catch up (Broekhof, 2011a).

To reduce the disadvantages among these children, their language and reading skills have to be stimulated in another way. This seems possible through *incidental learning*, which is a process of learning without the intention of doing so (Ahmad, 2011; Broekhof, 2011a). In terms of language acquisition, one learns new words while listening to a story or reading an interesting text (Broekhof, 2011a). In fact, most theorists are convinced that the bulk of vocabulary growth during childhood occurs indirectly, through language exposure, rather than directly, through teaching. Moreover, as most speech is lexically impoverished compared with written language, many researchers have argued that reading volume, rather than oral language, is the main contributor to individual differences in children's vocabularies (Cunningham & Stanovich, 1998). Leisure reading thus seems to be an important complement to instruction at school when it comes to reducing learning disadvantages.

Leisure reading, also often referred to as reading for pleasure, independent reading, recreational reading, and voluntary reading (Clark & Rumbold, 2006; Moyer, 2011), has been defined in the literature in various ways, with the common component being that it is part of a non-school (and non-work) recreational activity (Moyer, 2011). Leisure reading typically involves materials that reflect one's own choice (Clark & Rumbold, 2006). Nowadays, reading is not limited to printed texts, as electronic devices such as personal computers, mobile phones, e-readers, and tablets offer a wide variety of digital reading opportunities, taking the form of, for example, e-books, emails, articles on websites, text and WhatsApp/Ping messages, and postings on social networking sites such as Facebook and Twitter (Clark & Douglas, 2011; Gillebaard & Jager, 2011).

It has been suggested that the nature of reading is changing due to the use of digital devices (Coiro, 2003; OECD, 2011b; van der Weel, 2011), as digital texts can differ from printed texts in several respects, such as the nonlinearity of page structures, the potential dynamic nature (OECD, 2011b), the amount of text visible to the reader at any one time (Gil-Flores, Torres-Gordillo, & Perera-Rodríguez, 2012), the (possible) interactivity, and the inclusion of multiple media forms (Coiro, 2003). Culture critics Carr (2011) and Wolf (2007; as cited in N. Bakker, 2013) feared that the rather shallow and fragmented form of reading that is thought to come with non-linear reading and multitasking (i.e., switching between the different functionalities of the device) diminishes the capacity for concentration, interpretation, and contemplation. Although empirical research that either confirms or rejects such claims is scarce, it cannot be argued that every electronic device and digital text comes with a similar degree of (potential) shallow and fragmented reading (N. Bakker, 2013). For instance, blogs or messages on Facebook are much more concise and prone to stimulating non-linear reading and multitasking compared with an e-book. Moreover, texts on websites are more susceptible to language errors and logical inconsistency due to lack of editorial assistance (Huysmans, 2013). Thus, different types of digital texts do not seem to offer equal reading experiences.



This review focuses on the rather immersive and sustained forms of reading as a recreational activity, because this is the kind of reading that reading promotion is aimed at (N. Bakker, 2013). This type of leisure reading includes, for instance, reading storybooks and comic books (paper and digital forms), but not text messages, emails, and postings on social networking sites. Although leisure reading is usually considered to be limited to a non-school activity, we also discuss some studies that address in-school free reading (i.e., time set aside for reading for pleasure at school during which students can read whatever they wish – within reasonable limits – with little or no accountability in the form of grades or book reports; Krashen, 2004a), because this form can also be considered a similar kind of recreational reading. The remaining part of this section discusses the state of the art regarding leisure reading in the Netherlands as well as research on the relationship between leisure reading and school performance.

Leisure reading in the Netherlands. A study on the reading behavior of 7- to 15-year-olds in the Netherlands showed that, in 2012, 68% of children aged 7 years reported reading a book nearly every day, whereas this was true for 35% of 12-year-olds and 20% of 15-year-olds. Fiction books were most often read by the children, followed by comic books and non-fiction books (Huysmans, 2013). The Progress in International Reading Literacy Study (PIRLS), a large-scale international comparative study using self-reported data, demonstrated that between 2006 and 2011, the frequency of reading for pleasure slightly increased among fourth graders in the Netherlands. In 2011, 36% of the students indicated spending 30 minutes to one hour on leisure time reading a day and 22% of the students reported reading more than one hour per day. Migrant children more often reported reading to acquire information than native Dutch children. The two groups did not differ in time spent reading for pleasure (Meelissen et al., 2012).

With regard to digital reading among children in the Netherlands, findings from the 2006 PIRLS showed that fourth graders indicated spending more time on a typical day reading articles and stories in books or magazines than online (Mullis, Martin, Kennedy, & Foy, 2007). Huysmans (2013) showed that in 2012 only 3% of children aged 7-15 years reported reading book apps (e-books) during leisure time, whereas storybooks were read by 85% of the children. With respect to ethnical background, a survey-based study by Hirzalla, de Haan, and Ünlüsoy (2011) indicated that migrant adolescents, more than their native Dutch counterparts, were involved in online discussions, searching for information online, and emailing, types of reading we chose not to consider in this chapter (see above). Ethnic differences in e-book reading have as yet not been examined in the Netherlands.

Relationship between leisure reading and school performance. There is a vast amount of research demonstrating the importance of reading behavior for reading proficiency and language ability (see Broekhof, 2011a; Krashen, 2004b), although some studies have found no such effect (Aarnoutse & van Leeuwe, 1998; Carver & Leibert, 1995; Otter, 1993; Taylor, Frye, & Maruyama, 1990). In 2007, the American institute NEA published *To Read or Not to Read*, a report which – on

the basis of the most accurate national (American) data available – showed that reading for fun strongly correlates with academic achievement. Youth who reported reading for pleasure on a daily or weekly basis had higher reading scores than less frequent readers. Similar results were found in the 2006 PIRLS. Internationally, students who indicated reading for fun (almost) every day had an average reading score of 516 points, compared to 503 points for students reading for fun once or twice a week, and 484 points for those reading only twice a month or less (Mullis et al., 2007). For Dutch children in particular, these reading achievement scores were 566, 550, and 530, respectively (Netten & Verhoeven, 2007). Other research has demonstrated that Dutch children (between 7 and 15 years of age) who indicated being very good at reading reported more reading behavior than children who perceived themselves as less advanced readers (Huysmans, 2013).

With respect to vocabulary, it has been estimated that children who read approximately 15 minutes a day read 1 million words a year and can thereby enlarge their vocabulary with 1,000 words (Broekhof, 2011a). In line with this, Sullivan and Brown (2013), who studied a nationally representative sample of around 6,000 people born in Britain, found that (self-reported) leisure reading of books at both ages 10 and 16 was related to vocabulary at age 16. Reading frequency was even a stronger predictor of vocabulary than was reading proficiency at age 10. According to Krashen (2013), this finding supports the claim that literacy development can be improved anytime through free reading.

Researchers who have reviewed many studies on reading for pleasure also emphasize a positive link between reading and educational development. A publication that provides a case in point is *The Power of Reading* (Krashen, 2004b). On the basis of evidence from studies conducted all over the world, Krashen concluded that free voluntary reading (i.e., reading because you want to, both in- and out-of-school) positively affects the development of reading comprehension, vocabulary, spelling, and grammar. The findings of Mol and Bus (2011b) support this conclusion. They meta-analyzed 99 studies that addressed leisure reading of preschoolers and kindergartners, children attending grades 1 to 12, and college and university students. In sum, print exposure, as measured by checklists, appeared to be an important correlate of scores on reading and language tests. Children reading books in their leisure time appeared to have better reading comprehension skills, larger vocabularies, and better spelling and technical reading skills than peers with less reading experience.

As most school subjects depend to varying degrees on reading and language ability, one would expect mastering these skills to also positively affect other areas of school (Logan & Johnston, 2009). This is supported by the findings of Kortlever and Lemmens (2012) who investigated the correlation between self-reported reading frequency outside school and sixth-grade students' scores on a widely used standardized test in Dutch primary schools, the Cito-test. This test establishes several learning outcomes: language, math, study skills, and general knowledge of the world. Kortlever and Lemmens found that leisure reading positively related to the overall test score



as well as to the scores on the separate Cito-test elements. The relation between reading behavior and the Cito-test scores was fully mediated by the language test score, indicating that reading frequency correlates with better language skills, which in turn explained the better scores on the other Cito-test elements.

Not much is known about the relationship between reading behavior and student achievement for migrant students in particular. Research has suggested that the positive effects of reading also hold true for migrant children (Broekhof, 2011a; Krashen, 2004b; Lao & Krashen, 2000). Krashen (2004b) referred to studies conducted by Elley showing that reading for pleasure has a strong effect on second-language learners. In one of these studies (Elley & Mangubhai, 1983), he studied Fiji Islands' primary school students who were learning English by following daily classes of 30 minutes. A sample of fourth- and fifth-grade students was randomly assigned to one of two experimental groups or a matched control group that followed the normal structured English language program. The first experimental group engaged in free reading instead of the standard program, whereas the second experimental group participated in a shared book reading experience method in which the teacher shared a book several times with the class by, for instance, reading it aloud and discussing it with the students. The time devoted to the English language was the same for all groups. After 20 months, both experimental groups – who performed quite similar – outperformed the traditionally taught group on tests of reading comprehension, writing, and grammar. Eight years later in Singapore, studying approximately 3,000 children (aged 6-9 years), Elley again found students who engaged in a free reading program (i.e., a combination of shared book reading experience, language experience, and free reading) performing far superior not only on reading comprehension, writing, and grammar, but also on vocabulary, listening comprehension, and oral language than their traditionally taught peers. In contrast, van Elsäcker-Bok (2002) who studied native Dutch and minority students across third and fourth grade, did not find positive results for non-Western migrant students. She showed a positive effect of leisure reading on the reading comprehension level of native Dutch students, but no effect for students with a Turkish or Moroccan background. The minority good readers reported reading at home as frequently as the minority poor readers.

Research focusing on low-ability readers can also shed more light on the effects of leisure reading for migrant children, given their learning disadvantages. For example, Cunningham and Stanovich (1998) found a positive link between reading behavior and language ability both for more able readers and children with limited skills. On the basis of their meta-analysis, Mol and Bus (2011b) demonstrated that leisure reading is especially important for low-ability readers. Basic reading skills of (primary and middle school) students with a lower reading ability were even more strongly related to print exposure than those of higher ability readers. These results imply that the effects of leisure reading also, or even more strongly, hold for students with a migrant background. On the other hand, Mol and Bus (2011b) also found that (in college and university students), low-

ability readers benefited less from print exposure in terms of spelling skills than students whose reading proficiency fell into the normal range.

In some studies addressing the relationship between reading and school achievement, the measurement of leisure reading is limited to reading (fiction) books, whereas in other studies, other types of printed media are taken into account as well. The different kinds of reading materials can contribute to children's vocabulary development, which holds true especially for learning rare (low-frequent) words like those used in school language and subjects like geography and history (Broekhof, 2011a). Research has shown that reading a wide variety of materials, as assessed through a questionnaire, is strongly related to reading achievement scores (Gille, Loijens, Noijons, & Zwitser, 2010).

Using data from student questionnaires and tests, research has suggested that books, in particularly fiction books, have the strongest impact on children's linguistic skills (Gille et al., 2010; OECD, 2011a). In line with this, the 2006 PIRLS showed that reading informational texts has a less clear-cut relationship with reading achievement than reading novels and short stories (Mullis et al., 2007). A publication reporting on empirical studies also indicated that reading fiction has a greater impact on vocabulary than reading of non-fiction does (Hakemulder, 2011). Cunningham, Stanovich, and West (1994; as cited in Kortlever & Lemmens, 2012) have shown that reading magazines also correlates with academic achievement, although not as strongly as book reading, whereas Kortlever and Lemmens (2012) did not find a relationship between reading magazines and learning outcomes. Nevertheless, Cunningham and Stanovich (1998) cited statistical studies on several reading materials, demonstrating that print media (i.e., adult books, newspapers, abstracts of scientific articles, children's books, comic books, and popular magazines) contain a far greater average number of rare words than TV shows or (higher educated) adult speech.

Other research has been conducted addressing the relation between reading digital texts and reading proficiency. For instance, Clark and Douglas (2011), who analyzed survey data and reading attainment scores of a large sample of youth (aged 7-16 years) in the United Kingdom, found that youth who reported reading more traditional paper-based materials (e.g., fiction, non-fiction, and poems) were more likely to read above the expected level for their age than those who read, for instance, websites, text messages, and emails (Clark, 2012; Clark & Douglas, 2011). Respondents who reported reading e-books were likely to read above the expected level as well (Clark, 2012). Jeong (2010), in his study of a small sample of Korean sixth graders, found that paper books enabled better reading comprehension than e-books, although he stated that previous studies on reading comprehension comparing e-books and printed books found that, overall, comparable attainment can be achieved.

It should be noted here that the source used for reading e-books seems to be important and can therefore have consequences for research outcomes when comparing e-books and paper books. For example, on the basis of self-reported survey data of about 1,300 Dutch people (from



13 years of age onward), N. Bakker (2013) showed that the experience of reading a book from an e-reader, a unifunctional device, was rather similar to reading a book on paper. On the contrary, respondents who read e-books from a tablet or laptop, multifunctional devices, reported lower levels of concentration, comprehension, relaxation, and pleasure than when reading a paper book. Experimental research is needed to further investigate differences in reading experience between various media used for digital reading.

READING PROMOTION THROUGH PARENTS, SCHOOLS, AND PUBLIC LIBRARIES

As leisure reading appears to be key to school performance, reducing educational disadvantages among children seems to go hand in hand with reading promotion activities (Hermans, 2002). Reading promotion is typically aimed at increasing reading frequency, and improving reading and language skills as well as reading attitude (Stalpers, 2005). These factors are often found to be related in a reciprocal manner: Children who report more positive attitudes toward reading will tend to read more, which in turn translates to a higher reading and language ability (Broekhof, 2011a; Cubiss, 2012; Meelissen et al., 2012; Mol & Bus, 2011a).

It is assumed that childhood is a crucial period for stimulating reading, as reading socialization experiences seem most effective during the so-called formative years (between ages 5 and 20; Kraaykamp, 2003). Over the last decades, national (annual) recurring reading promotion activities and projects aimed at children have been initiated in the Netherlands, as well as various unique and local reading promotion interventions. However, research on the effectiveness of Dutch reading promotion activities is rather scarce (Bonset & Hoogeveen, 2009; Piek, 1995). Studies that did examine the results of such interventions yielded positive effects, such as increased reading motivation and reading frequency, and a broadening of reading interests (e.g., de Haan & Kok, 1990; Hermans & Jans, 2012; Stokmans, 2007).

According to sociologist Kraaykamp (2002, 2003), however, it is far from clear if reading socialization activities really are effective. Kraaykamp (2003) stated that “cultural knowledge and skills are not acquired by unique and nonrecurring introductions to literature or culture” (p. 236). He has suggested that to be effective, reading promotion efforts should take place through intensive recurrent contact in a relevant social context. The conditions for reading socialization occur primarily in three institutions: at home, in schools, and in libraries (Kraaykamp, 2002, 2003). In the following sections, these three socializing agencies will be discussed.

Parents. A large body of literature have demonstrated the importance of parental socialization for children’s reading behavior, reading attitude, reading ability, and overall educational success (R. Bakker, 2011; Broekhof, 2011a; De Graaf, De Graaf, & Kraaykamp 2000; Kraaykamp, 2002, 2003; Mol & Bus, 2011a, 2011b; Notten, 2011; van Steensel, 2006; Verboord, 2003). Parents may influence their children’s reading development either by setting an example or by actively

stimulating children’s reading habits, referred to as *imitation* and *instruction* (Bandura & Walters, 1963; Kraaykamp, 2002; Leseman & de Jong, 1998). Applied to reading promotion, imitation, which takes place more or less unconsciously, refers for example to parental reading behavior and the availability of reading materials at home. In instruction, on the other hand, parents deliberately encourage their child’s development by, for example, reading books to children, recommending books, discussing books, and giving books as a gift (De Graaf et al., 2000; Kraaykamp, 2002, 2003).

In migrant families, there often seems to be a less favorable reading climate compared with native Dutch families. Studies have indicated that migrant children are less likely to be read to, have fewer reading materials at home, and their parents are less inclined to set an example by reading themselves (de Vries, 2007; Hermans, 2002; Scheele, 2010; van Steensel, 2006). Literature also points to differences in reading climate between different migrant groups. For example, Turkish-Dutch parents more often read to their children than parents of Moroccan origin. In families with a Turkish background, maintenance of the Turkish language is generally highly valued and also facilitated by the widespread availability of Turkish reading materials, including books for young children. Accordingly, children in these families are often read to in their first language. Moroccan-Dutch families, however, more often have to rely on Dutch reading materials, because the primary language of the majority of these families is Berber, a non-scripted language (R. Bakker, 2011; Scheele, 2010).

Schools. Children spend a considerable amount of time at school, an institution where they acquire knowledge and skills. Like parental socialization, education is also suggested to be influential in children’s cultural development, as school introduces many children to reading and culture (Kraaykamp, 2003). Using nationally representative survey data, Dutch research on the effect of secondary school socialization in the long run has shown that cultural education and an extensive humanities oriented set of finals correlate with a stronger preference for literature later in life (Kraaykamp, 2003). On the basis of surveys administered to a sample of teachers and their former students, Verboord (2003, 2005) found that a more student-centered literary education (i.e., with lessons adjusted to the students’ preferences) results in a higher book reading frequency at an adult age. Furthermore, Stalpers (2005, 2007) has demonstrated on the basis of data from student questionnaires that teachers’ behaviors such as reading themselves, and discussing and recommending books, are positively related to the reading attitudes of secondary school students.

With regard to primary school, it is suggested that different accents between school curricula may have different consequences for children’s reading development, with more effective instruction, in terms of method and scheduled time, leading to a higher reading ability (de Jong & Leseman, 2001). Reading for pleasure at school also seems of importance. For example, on the basis of a review of studies, Krashen (2004b) indicated that students engaging in a free reading program often had a higher reading achievement than students in traditionally taught classes, and the longer the reading program lasted, the greater the gains. On average and almost without



exception, students who read for fun within the context of a reading program lasting longer than 12 months performed better than their counterparts in classes that lacked free reading.

In the Netherlands, elementary schools are free to shape their curricula. Therefore, schools differ in the methods they use as well as in the time spent on reading and language education (Meelissen et al., 2012). Although instructional time is considered a crucial resource with regard to students' opportunity to learn, it is difficult to capture its effect on student performance, because various factors can influence the productivity of the instruction hours (Mullis, Martin, Foy, & Drucker, 2012). The 2011 PIRLS sheds light on the instructional time spent on language and reading in Dutch schools (fourth grade). Teachers who participated in this study indicated spending on average 8.4 hours a week on language education and/or other language activities. This is more than was reported in 2006 and 2001 (7.8 and 7.7 hours, respectively). On average, teachers spend the most hours on reading (31%), followed by grammar and spelling (27%). In addition, the teachers often give their students the opportunity to read for pleasure in class, and students are frequently read to by the teacher or by fellow students (Meelissen et al., 2012).

On the basis of interviews and surveys, Oberon (2009), however, concluded that many Dutch primary schools do not exhibit a systematical and structural approach regarding reading promotion. Teachers themselves often engage on their own initiative in reading activities with their students. However, many schools do participate in annual national reading promotion campaigns and activities (Oberon, 2009; Stichting Lezen, 2012).

Public libraries. Studies on reading socialization point out the importance of the availability of reading facilities (see Kraaykamp, 2003). Having easy access to a wide variety of reading materials is positively linked to children's reading behavior, reading proficiency, and motivation to read (Gille et al., 2010; Guthrie & Humenick, 2004; Krashen, 2004b). In the Netherlands, such circumstances are created by public libraries (Kraaykamp, 2003) and a library membership is usually free for children under 16 years of age and 16- and 17-year-olds are often charged a reduced fee (Huysmans & Hillebrink, 2008; Huysmans & Röst, 2009). Dutch research by Kraaykamp (2002, 2003) has indicated that the library is effective in promoting interest in reading and that people who were in their youth library members for a long time exhibit a stronger preference for literary books and suspense novels later in life.

Since the 1990s, library use in the Netherlands has shown a decline in terms of memberships, visits by members, lending, and number of books borrowed (Huysmans & Hillebrink, 2008). Between 2000 and 2013, library membership fell by more than 10% to 3.86 million members. Yet, this trend does not apply to young people between 0 and 17 years of age. In 2013, 2.24 million youths were library members, compared with 1.98 million in 2005 and 2.05 million in 2000. This is partly a result of public libraries' increased efforts directed to young people, such as the implementation of reading promotion programs. Consistent with the trend among adults, though, the number of items borrowed by young people has decreased between 2000 and 2013

from 58.8 million to 38.0 million. The number of materials they borrowed in the non-fiction section declined more steeply than in the fiction segment (Statistics Netherlands, 2014). Research conducted in 2009 among a representative sample of primary school children (aged 7-12 years) revealed that 73% of 7- to 9-year-olds and 70% of 10- to 12-year-olds who reported having a library membership (77% and 84% of the total group, respectively) had borrowed at least one book in the month before the survey (Siebelhoff, Caarels, & Shen Cheung, 2010).

Research by Huysmans and Hillebrink (2008) has shown a difference in self-reported library use between native Dutch citizens and ethnic minority groups. Contrary to the overall downward trend, library membership and recent borrowing of books increased among citizens with a Turkish and Moroccan background between 1995 and 2003. Ethnic minorities also show a different pattern in library use by age. Unlike the native Dutch population, library use is high among migrant teenagers and young adults (aged 15-24 years), especially among those of Turkish and Moroccan origin, whereas the library is rarely visited by older adults with a migration background. Ethnic differences in library usage among children under 15 years could not be assessed in this particular study. Some insight is given by de Jong et al. (2010) who drew on a large-scale survey study conducted in 2007. They found that non-Western children between 4 and 12 years of age more often reported visiting the public library at least once a month than did their native Dutch counterparts (55% vs. 46%). However, library membership was more common in indigenous children (85%) than in those of non-Western origin (77%).

Nowadays, the reading promotion activities of Dutch libraries go beyond lending books. Libraries all over the country organize a range of activities to enthruse children, making the library an institution that promotes reading in a broad sense (<http://www.lezen.nl/>; Kraaykamp, 2003; Oberon, 2009). Cooperation between schools and public libraries is also very common in the Netherlands when it comes to reading promotion: More than 80% of the libraries who participated in a 2009 study reported working together with primary schools in all their branches (Kasperkovitz et al., 2009). For instance, students visit the local public library with their teacher, libraries organize shows for students, and libraries inform teachers about national reading promotion interventions (Oberon, 2009).

Moreover, many primary schools in the Netherlands have some sort of school library (Bonset & Hoogeveen, 2009; Heesters, van Berkel, van der Schoot, & Hemker, 2007; Oberon, 2009). A study conducted in 2005 showed that, according to questionnaires administered to a sample of teachers, the library's collection was often in the school's own possession. To a lesser degree, the collection was provided by the public library (Heesters et al., 2007). Currently, school libraries supported or even run by public libraries are becoming increasingly common (Oberon, 2009, 2011).

EFFECTIVENESS OF SCHOOL LIBRARIES

Since the 1960s, many studies have addressed the effectiveness of school libraries (Roberson,



Schweinle, & Applin, 2003). According to Krashen (2004b; Krashen, Lee, & McQuillan, 2012), it has been well established that access to books, as provided by school libraries, results in more reading. Given the suggested positive relationship between reading behavior and proficiency in reading and language, school libraries seem to have the potential to improve the school performance of students.

Indeed, a substantial body of foreign research has established a positive link between school libraries and improved learning outcomes (see Ryan, 2004; Scholastic, 2008). Some of the most significant studies include the work of Lance and associates (Roberson et al., 2003). Their work encompasses a number of statewide studies conducted in the United States and involves both primary and secondary schools (Ryan, 2004). The first of these studies was carried out in Colorado (Lance, Welborn, & Hamilton-Pennell, 1993) and revealed that the size of the school library (in terms of its collection and staff) was positively related to scores on reading tests. The results from subsequent studies in Colorado and other American states consistently indicated that access to school libraries enhances student achievement, irrespective of how achievement was measured (i.e., standardized reading scores, literacy, or learning more generally). In addition, reading enjoyment was strongly related to the presence of a teacher-librarian (Blackett & Klinger, 2006). Based on varying instruments (e.g., student surveys, teacher-librarian surveys, tests, and focus groups of teachers and students), research carried out in other countries, such as England (Clark, 2010), Scotland (Boelens, 2010; Williams & Wavell, 2001), and Australia (Hay, 2003; Softlink, 2012), confirmed that school libraries contribute to school attainment, as well as to reading enjoyment (Clark, 2010).

Foreign research also sheds light on the attributes of school libraries that are positively linked to student achievement. First of all, the presence of adequate, qualified library staff is found to be of vital importance. An effective school librarian has an instructional role, guides students toward a love of reading, and interacts and collaborates with classroom teachers. Moreover, studies have also demonstrated the importance of funding, library usage, and flexible library access as well as the size and quality of the collections and access to technology (Gavigan, Pribesh, & Dickinson, 2010; Lance, Rodney, & Hamilton-Pennell, 2005; Michie & Chaney, 2009; Roberson et al., 2003; Scholastic, 2008).

The rather limited available data from the Netherlands on school libraries also show positive outcomes. A pilot study of *the Library at School* involving 7 libraries and 31 primary schools showed that youth membership grew with 65% and book loans with 115% (Oberon, 2011). A growth in book loans was also found in the town of Almere (Oberon, 2011). The research and statistics department of the public library in Vlissingen noticed that a school library was related to more self-reported reading activity among children (Oberon, 2011). A more extensive research was conducted by Geurtsen (2008), who studied the effectiveness of a specific library run for and by students of three primary schools in Hoom. He found that these children reported more leisure time reading than children in a control group. Controlled for confounding factors, the difference

was over 10%. The attitude toward books was also more positive among the experimental group. The difference amounted to nearly 13%. Due to data limitations, it was not possible to adequately test the impact of the library on reading ability (Geurtsen, 2008; Geurtsen & Huysmans, 2008).

More recently, Huysmans et al. (2013) studied the effects of the Dutch policy program the Library at School on primary school students' leisure reading and attitude toward reading books in the first year of the nationwide implementation of the program. Based on survey data collected in the school year 2011/2012 from a sample of 4,682 students and 284 teachers from 68 schools, multilevel regression analyses showed that effects of the Library at School could not yet be discerned in this starting phase, although slightly positive univariate effects were found. It should be noted that the number of participating schools was limited in this early effect evaluation, hence statistical power was low on that level. Nielen and Bus (2015) also studied the effects of the the Library at School program among fourth and fifth graders, comparing 31 schools that had implemented this program with 10 schools that lacked this program. They found that students attending the schools with the school library program scored higher on reading comprehension, and that girls attending these schools read more and were also more motivated to read.

Although there are numerous studies on the effectiveness of school libraries, little is known about the impact of a school library on subgroups, particularly on groups of disadvantaged and at risk children (Lonsdale, 2003), such as ethnic minorities. Several studies addressing the impact of school library characteristics on student achievement have attempted to statistically adjust for school and student characteristics, including the students' racial or ethnic background. Linkages between characteristics of school libraries and improved test scores appeared to persist after making such adjustments. For example, flexible scheduling and library staffing were found to exert a positive influence on achievement, regardless of the students' race/ethnicity (Lance et al., 2005; Michie & Chaney, 2009). These findings seem to imply that "success factors" of school libraries apply to students of various racial/ethnic backgrounds (at least in the United States). This is in line with the findings of Lance and Schwarz (2012) who studied the impact of characteristics of school library programs in Pennsylvania on reading scores of selected student cohorts that tend to experience achievement gaps. They indicated that Hispanic and African American students benefited proportionally more from strong school library programs than did students in general. This seems to suggest that adequate school libraries play a role in helping to close the achievement gap between advantaged and disadvantaged students (Williams et al., 2013). However, it is not clear whether these findings can be applied across different educational and cultural contexts.

To shed more light on the possible influence of school libraries on migrant students, we will next discuss other relevant literature that indirectly address this subject. If we, for example, follow the line of reasoning of the theory of social and cultural reproduction (cf. Bourdieu, 1992), we would expect only a marginal effect of reading interventions taking place outside the home on migrant students (Broeder, Stokmans, & van Wijk, 2011). After all, the impact of parental socialization (i.e., primary



socialization) is granted more importance here than the school context (i.e., secondary socialization; Verboord, 2003). Given their less favorable reading climate at home, interventions would – in this line of reasoning – barely have an enduring effect on migrant children, as the home environment is not supportive to these interventions, especially if one endorses that primary socialization can hardly be compensated by secondary socialization (Broeder et al., 2011).

In line with this, research has shown that parents are of utmost importance. For instance, Stalpers (2005, 2007), who surveyed students attending Dutch secondary schools, found that the reading climate created by parents (e.g., number of books they read themselves and the frequency they talked about books) had a direct effect on both the students' reading frequency and reading attitude, whereas the reading climate of teachers was only, and to a smaller extent, positively related to the students' reading attitude. In the study of Huysmans et al. (2013), it was found that parental reading socialization was also a stronger predictor of primary school students' reading behavior and attitude than were reading promotional efforts in schools and classes. With regard to school performance, Veenstra (1999), who analyzed data on around 7,000 students from 150 Dutch secondary schools, pointed to the limited impact of schools. Differences in test scores were for the most part explained by characteristics of the student and his or her family.

On the other hand, there are studies suggesting that, besides parents, public libraries and schools are of importance (as was shown in the former section) and that these institutions can even compensate for an unfavorable home climate. Kraaykamp (2002), for example, who analyzed nationally representative survey data on adults, concluded in his study that parents, schools, and libraries are all effective in promoting reading, with no institution standing out. They seem to work complementarily rather than competitively.

Verboord (2003) also showed that activities of both parents and schools strongly affect later reading frequency, with primary socialization even seeming to be of slightly less importance than secondary socialization. Leseman and de Jong (1998), who studied a multiethnic sample of 89 families in the Netherlands found that by the end of first grade, Turkish-Dutch children attained far lower vocabulary scores than native Dutch children (the Surinamese-Dutch children scored in between), whereas such marked differences were not found with regard to word decoding (i.e., the technical ability to decipher written words). According to the authors, this finding points to the equalizing effects of reading instruction in primary school, given that (at the time of the study) the acquisition of decoding was often strongly emphasized in the early-years' curriculum, whereas vocabulary development was often not an explicit part of the first years of primary school.

Furthermore, Rivkin, Hanushek, and Kain (2005) suggested that high quality instruction by teachers throughout primary school could compensate considerably for disadvantages associated with a low socioeconomic background, on the basis of a rich data set providing information on students in the State of Texas. Access to books and libraries has also been found to counter negative effects of poverty on reading achievement scores, as was demonstrated by several large-

scale studies conducted in various countries (see Krashen, 2011; Krashen et al., 2012). In line with this, Allington et al. (2010), who used student questionnaires and tests to study the effect of a reading intervention on leisure reading and reading achievement, found the strongest effects for students from the poorest families.

With regard to ethnic background Broeder et al. (2011), who analyzed differences in reading climate between native Dutch and migrant families, argued that reading interventions for youth are probably just as likely to be effective for migrant students as for their native peers, differences in educational level and gender taken into account. According to Broekhof (2011a), it is plausible that benefits from language stimulation activities at school are particularly obtained by children from non-Dutch-speaking families (if not compensated by parents talking much in their mother tongue with their children on a challenging level) and where reading to the children is not a common activity. De Haan and Kok (1990), who studied the effects of reading promotion activities in the school context in the city of Utrecht on students' reading motivation and frequency, indeed found stronger effects for children from families with a low developed reading culture. Given the generally less developed reading climate in migrant families, this result would especially apply to children from ethnic minorities.

DISCUSSION

Ethnic inequality in school performance is an urgent policy and research issue. Primary school students with a non-Western migrant background – who make up a considerable proportion of the total school population in the Netherlands and in other Western countries – often face educational disadvantages, especially in language and reading proficiency (Gijssberts & Iedema, 2012; Schnepf, 2007). This is a cause of concern considering the importance of good language and reading skills for participating successfully in society (Johnsson-Smaragdi, 2006; NEA, 2007).

Reducing educational disadvantages is suggested to go hand in hand with reading promotion activities (Hermans, 2002). These are typically aimed at increasing reading frequency, and improving reading and language skills as well as the attitude toward reading (Stalpers, 2005), factors that are often found to be related in a reciprocal manner (Broekhof, 2011; Cubiss, 2012; Meelissen et al., 2012; Mol & Bus, 2011a). Schools and libraries are, besides parents, important agents when it comes to reading promotion (e.g., Kraaykamp, 2002, 2003).

Nowadays, school libraries in primary schools supported or run by public libraries and aiming at reading promotion are becoming increasingly common in the Netherlands (Oberon, 2009, 2011). Given the investments involved and the importance of reducing educational disadvantages, it is relevant to have insight into the effectiveness of reading promotion efforts by school libraries. By identifying what is known and what is as yet unknown about reducing learning disadvantages through school libraries among children in general, and children from a migrant background in particular, this literature review aimed at pointing to directions for future research.



According to the literature, it has been established that access to books, as provided by school libraries, results in higher levels of reading (Krashen, 2004b; Krashen et al., 2012). Given the positive relationship often suggested between reading behavior and proficiency in reading and language, school libraries seem to have the potential to improve these skills (e.g., Broekhof, 2011a; Krashen, 2004b, Mol & Bus, 2011b). In line with this, a considerable amount of research conducted outside the Netherlands has shown that school libraries are related to better learning outcomes for students in general (Clark, 2010; Lance et al., 1993; Ryan, 2004; Scholastic, 2008). Studies conducted abroad stress the importance of adequate school library staff in this context, and attributes such as funding, flexible library access, and adequate collections are also found to be important success factors of school libraries (e.g., Lance et al., 2005; Scholastic, 2008). The limited amount of Dutch research on school libraries has also shown positive outcomes, such as more leisure reading among children and a more positive attitude toward books as well as a growth in youth memberships and book loans (e.g., Geurtsen, 2008; Oberon, 2011).

However, on the basis of previous research it is hard to draw firm conclusions about the effects of school libraries' efforts on migrant students in particular. To the best of our knowledge there are no studies that explicitly focused on the impact of school libraries on migrant students in the Netherlands. Research conducted in the United States did suggest that success factors of school libraries apply to students of various racial/ethnic backgrounds, and minority student seem to benefit proportionally more from strong school library programs. However, it is not clear whether these findings hold across different educational and cultural contexts. Moreover, literature that indirectly sheds light on the effects of school libraries on children with a migrant background is not unambiguous. On the one hand, studies have indicated that the home environment – which is usually not that favorable among migrant families in the Netherlands – is of utmost importance, suggesting only a limited impact of (interventions taking place at) other socializing institutions (e.g., Broeder et al., 2011; Stalpers, 2005, 2007; Veenstra, 1999). On the other hand, there are studies suggesting that, besides parents, public libraries and schools do play an important role, and that these institutions can even compensate for a reader-unfriendly home climate (e.g., de Haan & Kok, 1990; Kraaykamp, 2002, 2003; Krashen, 2004b, 2011; Leseman & de Jong, 1998; Verboord, 2003). Differences in methods could have contributed to these mixed results, although it should be noted that studies pointing in the same direction varied in methods as well.

The gaps in existing research on the effectiveness of school libraries should be addressed in the future to guide governmental policy in the Netherlands and other Western countries with a considerable proportion of non-Western migrant families. First of all, future research should explicitly focus on children with a migrant background. Although there are numerous studies on the effectiveness of school libraries on children in general, little is known about the impact of a school library on subgroups, particularly on disadvantaged and at risk children (Lonsdale, 2003), such as ethnic minorities.

Given the hitherto ambiguous research results, it is as yet too early to formulate firm policy recommendations about the contribution of reading promotion efforts in lessening disadvantages for ethnic minority children, and in particular the role of school libraries therein. More research is needed to see if and how so-called “Matthew effects” can be prevented to occur (children from advantaged backgrounds could profit more from the school library's services than their less advantaged counterparts, with a widening rather than a diminishing gap as the result; cf. Cunningham & Stanovich, 1998; Neuman & Celano, 2012).

Future research among migrant students should therefore focus on the possibly differential impact of reading promotion efforts by school libraries on reading behavior, reading attitude, and different areas of reading and language skills, such as vocabulary, reading comprehension, and spelling skills. Here, the triangular relationships between these factors for non-Western students could also be of interest. Furthermore, future research could address whether a possible positive effect of school libraries also indirectly affects the performance of migrant students on other school subjects such as math (cf. Kortlever & Lemmens, 2012). Apart from focusing on students with a migrant background, studies could also compare outcomes for migrant children and their native peers, and comparisons could be made between migrant students from various ethnic backgrounds. By having insight into the role of school libraries for migrant students in particular, more effective policies can be conceived. For instance, if school libraries are found to be effective for migrants, supporting school libraries could be incorporated in governmental policy targeted at reducing ethnic inequality in school performance, and collaborations between local governments, schools, and public libraries could be stimulated and formally established.

Furthermore, most studies on the effectiveness of school libraries have been conducted elsewhere, and it is far from clear if reading promotion efforts, such as offered by school libraries, actually are effective in the Netherlands (Bonset & Hoogeveen, 2009; Kraaykamp, 2002, 2003; Piek, 1995). To mount a strong case for recognizing a positive link between school libraries and student outcomes, and thus to justify policy along these lines, it is important to know whether the findings of foreign studies are also true for the Dutch context (Lonsdale, 2003). In addition, as it has been suggested that to be effective, reading promotion efforts should take place through intensive recurrent contact in a relevant social context (Kraaykamp, 2002, 2003), it seems also desirable to assess the long-term effects of school libraries.

Several studies have indicated that the impact of reading promotion activities was related to, for instance, the reading culture at home and poverty (Allington et al., 2010; de Haan & Kok, 1990; Krashen et al., 2012). Therefore, future research in the Netherlands and elsewhere could take into account that the impact of school libraries may depend on these and other family characteristics (i.e., there may be interaction effects), but possibly also on characteristics of the child itself (e.g., gender) and the class he or she is in (e.g., reading promotion efforts of the teacher). Moreover, future studies could address what criteria school libraries should meet in order to be effective for migrant students

in, for instance, the Netherlands. By knowing the success factors of school libraries and the groups of children who profit (more) from school libraries, more effective policies aimed at reducing learning disadvantages can be designed and financial resources can be used more efficiently.

Nowadays, reading also includes digital reading and Dutch school libraries increasingly pay structural attention to what can be referred to as digital/new literacies or 21st century literacies/skills. This involves skills and strategies required for the effective use of new technologies (e.g., Coiro, Knobel, Lankshear, & Leu, 2008; Leu et al., 2007; Schmar-Dobler, 2003), such as searching for adequate information on the Internet (Walraven, Paas, & Schouwenaars, 2013). From a policy perspective, it is of the utmost importance that this field will be addressed now that reading behavior may be gradually shifting from print to screens globally.

In conclusion, there seems to be a need for longitudinal research on the possible effects of reading promotion efforts by school libraries (e.g., guidance of a qualified librarian and offering children a varied collection) on migrant students. This is true not only of the Netherlands, but also of all countries witnessing ethnic inequality in educational performance. Future research should not only focus on the impact of school libraries' reading promotion efforts on the students' reading and language ability, but also on the other factors that reading promotion is directed at and which are often found to correlate positively with reading and language skills, that is, the students' reading behavior and attitude toward reading. Attention should also be paid to the possible contribution of school libraries to the students' digital literacies.

Addressing these issues is relevant from a scientific perspective, as gaps in the research literature can be filled by investigating whether a library facility in a primary school leads to an improvement in reading among migrant students. Besides being scientifically relevant, addressing these issues is of great societal relevance, as this can give indications whether or not a school library is an effective tool in reducing disadvantages among migrant students, and should be preferred (or not) above other policy instruments in the Netherlands and elsewhere. These indications can contribute to the empirical foundation of government policy with regard to reading promotion and public libraries. Identifying reading promotion projects that perform well in disadvantageous contexts helps policy makers design effective policy recommendations to overcome inequalities in learning opportunities (OECD, 2007).

Notes

1. According to Statistics Netherlands (Centraal Bureau voor de Statistiek [CBS]), a person is considered migrant (the exact term is *allochtonous*) if at least one parent was born outside the Netherlands, with a further distinction being made between migrants originating from Western countries (Europe – excluding Turkey, North America, Oceania, Indonesia, and Japan) and migrants coming from non-Western countries (Turkey, Africa, Latin America, and the rest of Asia; Alders, 2003).
2. In the Netherlands, education is compulsory from the age of five, but virtually all 4-year-olds are enrolled in primary schools. Dutch primary education takes eight years (Herweijer, 2009). The first two school years, group 1 and 2, resemble kindergarten and the final year, group 8, corresponds with sixth grade (Spotti & Stokmans, 2013).
3. The keywords used in our search were “school library,” “effect,” “relationship,” “importance,” “leisure reading,” “reading behavior,” “reading attitude,” “reading and/or language skills,” “school performance,” “reading materials,” “books,” “digital reading,” “reading promotion efforts,” “parents,” “parental socialization,” “reading climate,” “schools,” “primary education,” “teacher,” “curriculum,” “public libraries,” “library usage,” “reading intervention,” “access,” “migrant students,” and “the Netherlands”. Synonyms of these keywords were used as well (e.g., “impact,” “correlation,” “reading proficiency,” “academic achievement,” and “ethnic minority students”).

CHAPTER 3

EFFECT OF A SCHOOL LIBRARY ON THE READING
ATTITUDE AND READING BEHAVIOR IN
NON-WESTERN MIGRANT STUDENTS





ABSTRACT

There is a lack of clarity as to the effects of school libraries on children with a non-Western background in the Netherlands, an educationally disadvantaged group. Using a longitudinal design involving an experimental and a control school, the present study examined whether an integrated library facility in a Dutch primary school has an effect on the reading attitude and reading behavior of non-Western migrant students ($n = 140$). The results showed no statistically significant effect on the degree in which students think reading is fun. On the other hand, over time, students attending the experimental school considered reading more useful than students visiting the control school. With regard to reading behavior no statistically significant effect of the school library was found. However, the school library program was not implemented in the most optimal form, which may have affected the findings. Reading climate at home was found to be an important predictor of both reading attitude and reading behavior, stressing the importance of parents as partners for school libraries when it comes to reading promotion.

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Reading for pleasure can play an important role in a child's development. A considerable amount of research has demonstrated a strong association between reading behavior and good reading and language skills (Broekhof, 2011a; Krashen, 2004b). These skills are crucial for an individual's educational success and post-school opportunities (McGeown, Lynne, Griffiths, & Stothard, 2014) as well as for a country's economic growth (Coulombe, Tremblay, & Marchanc, 2004; Organisation for Economic Co-operation and Development, 2010). By reading for fun, children can also experience pleasure and gain general, cultural, and practical knowledge (Cunningham & Stanovich 1998; Kortlever & Lemmens, 2012; Stichting Lezen, 2012). Stories can help children gain knowledge about their own and other's feelings, thoughts, and motives (Hakemulder, 2011), and, as books can cover a wide variety of topics, children are presented with other perspectives and solutions than they would have encountered in their daily lives (Kortlever & Lemmens, 2012).

Internationally, the Netherlands stands out in a negative sense when it comes to reading for pleasure. In the most recent international comparative study of reading achievement at the fourth grade, the Progress in International Reading Literacy Study (PIRLS), conducted in 2011, 20% of the Dutch primary school students (aged 10.2 years on average) showed a positive attitude toward reading and reported reading for fun on a daily basis compared to 28% of the students internationally; and 27% of Dutch students had the least favorable attitude toward reading and read only once or twice a month in their leisure time compared to 15% internationally (Meelissen et al., 2012; Mullis, Martin, Kennedy, & Foy, 2007). Moreover, 65% of Dutch fourth-graders considered reading for pleasure a useful activity compared to 74% internationally, bringing the Netherlands in a position close to the bottom of the international ranking list. Although primary school students in the Netherlands perform pretty well when it comes to reading proficiency, their reading achievement declined between 2001 and 2011. In the international ranking list of PIRLS, the Netherlands has dropped over the decade from the 2nd position in 2001 to the 9th position in 2006, and the 13th position in 2011 (Meelissen et al., 2012; Mullis et al., 2012). This is out of line with the top-5 ranking ambition of the Dutch government (Ministry of Education, 2013). Moreover, national statistics indicate that one-third of third graders achieve the standard 'sufficient' for comprehending texts (van Berkel, Krom, Heesters, van der Schoot, & Hemker, 2007). A quarter of the students finish primary school with insufficient technical reading proficiency (Vernooy, 2009) and almost 14% of the 15-year-olds can be considered low-literate (Kordes, Bolsinova, Limpens, & Stolwijk, 2013).

Because of these concerns about reading in the Netherlands, the Dutch government has paid extra attention to structural reading promotion at school over the last years (Sectorinstituut Openbare Bibliotheken, 2008). Part of this is the program *the Library at School*.¹ This comprises a structural cooperation between public libraries, municipalities, and schools. Its main priority is to provide all students with a large, varied, and up-to-date collection in a school library (van Dam, Klerk, Langendonk, & Plooi, 2013). In line with this program, library initiatives in primary schools



aiming at reading promotion that are supported or even run by public libraries have become increasingly common (Oberon, 2009, 2011).

The present study focuses on the effects of a Dutch school library on the reading behavior and reading attitude of primary school students with a non-Western background in particular, an educationally disadvantaged group in the Netherlands as in other Western countries (Gijsberts & Iedema, 2012; Schnepf, 2007). Since the 1960s, migrants have come to the Netherlands in large numbers. Statistics show that in 2015, the Netherlands counted more than 2.0 million non-Western migrants² (i.e., 12.1% of the total population), of which migrants with a Turkish, Moroccan, Surinamese, and Antillean background constituted the largest groups (Statistics Netherlands, 2015). Together with the arrival of migrants, schools with a considerable percentage of migrant students have become more common in the Netherlands over the past decades, especially in the most highly urbanized areas (Herweijer, 2008). In 2014, nearly 17% of primary school aged children (4-12 years) were of non-Western origin (Statistics Netherlands, 2015). These children generally grow up in families with a relatively weak socio-economic position (Herweijer, 2009), and they are often partly or even entirely raised in a language other than the Dutch language (Scheele, 2010). Moreover, compared to native Dutch families, migrant children have fewer reading materials at home, are less likely to be read to, and their parents themselves are less inclined to read (de Vries, 2007; Hermans, 2002; Scheele, 2010; van Steensel, 2006). The situation of many non-Western migrant students places them at a higher risk for poorer school performance (Gijsberts & Herweijer, 2009). Indeed, research has clearly demonstrated that the educational achievement of children with a non-Western background – including those born in the Netherlands – lags behind that of natives, particularly when it comes to language ability and reading proficiency (Gijsberts & Iedema, 2012; Netten, 2014). Their disadvantages in the Dutch language are already manifest at the start of primary school and continue throughout primary school and beyond (Gijsberts & Iedema, 2012; Herweijer, 2009).

Given the crucial role of good reading and language skills, it is important to counter this ethnic inequality in school performance. Possibly school libraries provide an answer, since reading promotion, as provided by school libraries, is typically aimed at increasing children's reading frequency, and improving their reading and language skills as well as their attitude toward reading (Stalpers, 2005), factors that are often found to be related in a reciprocal manner (Broekhof, 2011a; Cubiss, 2012; Meelissen et al., 2012; Mol & Bus, 2011a, 2011b). Here, an upward spiral of causality has been suggested, where children who have more positive attitudes toward reading will tend to read more, which – through a process of incidental learning (i.e., learning without the intention of doing so) – translates to a higher reading and language ability. Conversely, in the case of a downward spiral, children with weaker reading skills feel less positive toward reading and are therefore less likely to read and practice their reading skills (Broekhof, 2011a; Huysmans, 2013; McKenna, Kear, & Ellsworth, 1995; Meelissen et al., 2012; Melnick, Henk, & Marinak, 2009; Mol & Jolles, 2014; Stokmans, 2006). By providing access to a large and varied book collection for all students, thereby

equalizing access to reading materials for disadvantaged children (Rodney, Lance, & Hamilton-Pennell, 2002), school libraries may contribute to setting in motion an upward spiral, also among children who are not accustomed to a reading culture at home. Based on an extensive literature review (Kleijnen, Huysmans, & Elbers, 2015a), the next paragraphs discuss research on the impact of school libraries on children in general and migrant children in particular.

Since the 1960s, research on the impact of school libraries on student achievement has been accumulating outside the Netherlands (Roberson, Schweine, & Applin, 2003; Williams, Wavell, & Morrison, 2013). Reviews of these studies point out a variety of attributes of school libraries that are positively linked to student achievement, such as the presence of qualified, full-time school librarians and appropriate support staff, large and up-to-date collections, and flexible library access (Kachel, 2013; Lonsdale, 2003; Scholastic, 2008; Williams & Wavell, 2001; Williams et al., 2013). Furthermore, it has been established that increased access to books, as provided by school libraries, is related to more reading (Krashen, 2004b; Krashen, Lees, & McQuillan, 2012) as well as to a higher enjoyment of reading (Lindsay, 2010). In line with this, school library users have been found to hold more positive attitudes toward reading than peers who do not use the school library (Clark, 2010).

The – as yet – rather limited available data from the Netherlands also suggest positive outcomes of school libraries. The research and statistics department of the public library in Vlissingen found that a school library was positively related to children's self-reported reading behavior (Oberon, 2011). In line with this, Geurtsen (2008), who conducted a study in Hoorn, found that children who visited a school library reported more leisure time reading and a more positive attitude toward books than a control group of students. A pilot study of the Library at School program involving 30 primary schools and seven libraries showed on the basis of library figures that book loans grew by 115% and youth membership by 65% after implementation of the program (Oberon, 2011). Huysmans, Kleijnen, Broekhof, and van Dalen (2013) studied the effects of the Library at School in the first year of the nationwide implementation of the program. Multilevel regression analyses on questionnaire data from a sample of 4682 students and 284 teachers from 68 schools showed that effects of the Library at School on the students' leisure reading and attitude toward reading books could not yet be discerned in this starting phase, although slightly positive univariate effects were found. Nielen and Bus (2015) also studied the effects of the Library at School among fourth and fifth graders, comparing 31 schools that had implemented this program with 10 schools that lacked this program. They found that students attending the schools with the Library at School program scored higher on reading comprehension, and that girls attending these schools read more and were also more motivated to read.

Although there are many studies on the impact of school libraries on children in general, little is known about the effects of school libraries on subgroups, particularly on groups of disadvantaged children (Lonsdale, 2003), including ethnic minorities. Several American studies



did find that relations between characteristics of school libraries and better test scores appeared to persist after statistically adjusting for school and student characteristics, including the students' racial or ethnic background (Lance, Rodney, & Hamilton-Pennell, 2005; Michie & Chaney, 2009). This seems to imply that so-called "success factors" of school libraries apply to youth of various racial/ethnic backgrounds (at least in the context the studies were conducted). Moreover, Lance and Schwarz (2012) discovered that African American and Hispanic students benefited proportionally more from strong school library programs (in Pennsylvania) than students in general, suggesting that these programs can play a role in helping to narrow the achievement gap between advantaged and disadvantaged students (Williams et al., 2013).

As indicated in the literature review by Kleijnen et al. (2015a, p. 10), literature that indirectly sheds light on the possible effectiveness of school libraries for migrant children is not consistent. "On one hand, studies have indicated that the home environment – which is usually not that favorable among migrant families in the Netherlands – is of utmost importance, suggesting only a limited impact of (interventions taking place at) other socializing institutions (...). On the other hand, there are studies suggesting that, besides parents, public libraries and schools do play an important role, and that these institutions can even compensate for a reading-unfriendly home climate."

PRESENT STUDY

Although ample studies have addressed the impact of school libraries, there is still much unclear as to the effects on children from migrant groups in the Netherlands. As outlined, many studies on the effectiveness of school libraries have been carried out outside the Netherlands. These studies often focus on gains in student learning in relation to school library characteristics. Research explicitly focusing on ethnic minorities is scarce, and literature on the role of the home environment, schools, and libraries which sheds light on the possible effects of school libraries on children with a migrant background in the Netherlands is not conclusive. The few studies on ethnic minorities – conducted outside the Netherlands – have suggested that success factors of school libraries apply to students of various racial/ethnic backgrounds and that ethnic minority students benefited proportionally more from strong school library programs. However, findings from studies conducted abroad cannot necessarily be considered valid to the Dutch context (Veenstra, 1999), not only because the implementation of school libraries, such as the role of the school librarian, can differ (Brabantse Netwerk Bibliotheek, 2013), but also because the ethnic minority groups in the Netherlands are not readily comparable with ethnic minorities in countries such as the United States. For example, the primary language of the majority of Moroccan-Dutch families is Berber, a non-scripted language (Scheele, 2010), which is completely different from African Americans and Hispanics in the United States.

In order to guide contextual governmental policy (in the Netherlands and other Western countries with the same or similar migrant groups), the gaps in existing research on the

effectiveness of school libraries need to be bridged. Therefore, following a longitudinal design involving an experimental and a control school, the present study aimed to investigate whether the integration of a library facility in a Dutch primary school's curriculum can be an effective tool for non-Western migrant students in terms of increasing their reading behavior and improving their attitude toward reading. The following research questions were addressed:

1. Does a school library have an effect on the *attitude toward reading* of non-Western migrant students?
2. Does a school library have an effect on the *reading behavior* of non-Western migrant students?
3. Are the effects of a school library on the reading attitude and reading behavior of non-Western migrant students *differentiated by gender, age, parental educational level, and reading climate at home*?

Given that the school library (as school libraries in general) was established in the belief that this facility positively impacts children's reading, we hypothesized that the students who attended the experimental school would show more improvement in both their reading behavior and reading attitude over time than the control school students. With regard to the third research question, we expected to find that the effects of a school library on migrant students' leisure reading and reading attitude differ for categories of gender, age, parental education level, and reading climate. On the one hand, one would expect a larger positive change in boys, older children, and children from less advantaged and less reader-friendly families since they have more to gain, given their generally less positive reading attitude and lower reading frequency (Clark & Foster, 2005; Cubiss, 2012; Huysmans, 2013; Logan & Johnston, 2009; Meelissen et al., 2012; Sainsbury & Clarkson, 2008; Siebelhoff, Caarels, & Shen Cheung, 2010; Swalander & Taube, 2007; van Elsäcker-Bok, 2002; Witte & van Nood, 2012). On the other hand, girls, younger children, children from highly educated families, and children with a rich reading climate at home – who on average have a more positive reading attitude and read more in their leisure time – may be even further enthused and stimulated through a school library, with a maintenance or even widening of the gap as a result. As the school library is aimed at motivating all students and providing access to an appropriate and attractive collection to all of them, we expected that the (possible) differences in reading attitude and reading frequency due to gender, age, parental educational level, and reading climate at home would be less evident or disappearing over time in the experimental school, which is not expected to happen in the control school.

METHOD

DESIGN

A longitudinal study with a quasi-experimental design was performed, involving an experimental group and a control group, without random assignment of participants because of the "real life"



nature of the study. Participants were students in two Dutch primary schools:³ one school with an integrated library facility (i.e., the experimental school) and one school without such a school library (i.e., the control school). Questionnaires (online and paper versions) were used to gather data from the students. The data were collected over three successive school years (2011/2012, 2012/2013, and 2013/2014), with one wave of data collection each year. In the first school year, data were collected from children attending grades 2 to 6. These students were also followed during the second and third school year (excluding those who moved to secondary education or left school for other reasons), as well as students who passed to second grade and new students (grades 2 to 6) who entered school.

It should be noted that, as in many Dutch schools, books were also present at the control school and read in class. However, a major difference is that the experimental school had a school library at its disposal, run and facilitated by the town's public library organization, with a large, well sorted, and varied collection of reading materials (see also Appendix A). The library provided a wide range of reading materials such as storybooks, comic books, picture books, and non-fiction books, with a total collection of approximately 5,400 materials. Books for all age groups and reading levels were present. The themes covered by the total collection were very diverse and included topics such as animals, school, history, sports, holidays, humor, love, and friendship. Books were sorted by reading level, type of reading material and topic. Every year, some books were weeded and other books (including newer titles) were purchased. Compared to the experimental school, the collection of the control school was smaller, far less varied and up-to-date, less well managed, and in the school's own possession, with teachers (and not a reading and media coach) being responsible for the book collection.

At the experimental school, a reading and media coach employed by the public library was responsible for the functioning of the school library. This person holds a bachelor's degree in education and had experience as a school teacher. She had also finished a course for reading consultants as well as a reading coordinator course and she was knowledgeable about children's literature. Her credentials are therefore comparable to those of a teacher-librarian in Anglo-Saxon school systems. Her main tasks included guiding students during library visits and helping them with finding appropriate books, developing, preparing and implementing reading promotion programs for the students, and interacting with the school teachers.

Every three weeks, children attending the experimental school visited the library with their classmates and teacher to return and borrow books during school hours. With their personal school library card, which was kept in the library by the reading and media coach, the students could borrow the books they had chosen, making use of the self-service counters. The books were taken to the classrooms where they would be read during free reading time. During the regular class library visits, students of the experimental school would also, alternately, participate in a reading promotion lesson with the whole class or complete a digital so-called reading log individually in

which they stated their opinion about the books they had read. The one-hour reading promotion lessons consisted of several components, including reading aloud to the children, creating a word web together, and students working individually or in small groups on processing assignments (i.e., students actively performed tasks related to the theme of the lesson, such as drawing a picture, participating in a quiz, creating a poster, playing with books, playing a word game, searching for information in books and on the Internet, and writing a short article). The reading and media coach ascertained that the lessons fitted in with the theme covered in the classrooms during that period (e.g., sports, super heroes, and the royal family) and were appropriate for the age and level of the students. After school hours, the library at the experimental school served as a public children's library, meaning that during a couple of afternoons a week, books could be borrowed by all (young) citizens with a public library membership card.

PARTICIPANTS

Students of the experimental and control school qualified for participation in the present study if they attended grade 2, 3, 4, 5 or 6 during (one or more waves of) the data collection. In our analyses, we only included data from students with a non-Western background (following the definition adopted by Statistics Netherlands²). Four children were excluded due to a lack of parental permission. One other student was excluded from the analyses because she first attended the experimental school and then the control school during the time span of the study. The final sample consisted of 140 participants across both schools, with one, two or three observations per student. In total, 261 student observations were available.

The present study focused on migrant children with a non-Western background in particular because they can be considered a disadvantaged or vulnerable group, as described earlier in the "Introduction" section. Western migrants were not included in the study, given that the number of Western migrant students attending the schools involved in this study was limited, and given that they are not considered an at-risk group (e.g., in general, the school performance of Western migrant primary school students does not lag behind that of native Dutch students; Onderwijs in Cijfers, 2015). Although it would also have been interesting to compare the non-Western migrant children with native Dutch children, this was not possible in the present study due to the limited number of students with a native Dutch background attending the experimental school.

The ethnic background of the students in the sample was primarily Moroccan (75%). Students from the other three major migrant groups in the Netherlands (Turkish, Surinamese, and Antillean) made up 12% of the sample, and other non-Western minority students accounted for the remaining 13% of the sample. The vast majority (93.1%) of the students were born in the Netherlands (i.e., second generation migrants). Data only available for a part of our sample showed that most (of these) participants grew up in families where both Dutch and another language (e.g., Berber or Turkish) were used.



TABLE 1 SAMPLE BY SCHOOL AND SCHOOL YEAR, IN NUMBER OF STUDENT OBSERVATIONS AND MEANS

	2011/2012		2012/2013		2013/2014		Total	
	Exp. (<i>n</i> = 33)	Control (<i>n</i> = 42)	Exp. (<i>n</i> = 51)	Control (<i>n</i> = 44)	Exp. (<i>n</i> = 44)	Control (<i>n</i> = 47)	Exp. (<i>n</i> = 128)	Control (<i>n</i> = 133)
Age (<i>mean</i>)	10.34	10.12	10.22	9.58	9.91	9.70	10.15	9.79
Gender								
Boys (<i>n</i>)	17	17	24	22	21	23	62	62
Girls (<i>n</i>)	16	25	27	22	23	24	66	71
Parental educational level (<i>mean</i>)	1.06	1.88	1.55	2.11	1.61	2.55	1.45	2.19
Reading climate (<i>mean</i>) ^a			2.09	2.31	2.49	2.36	2.30	2.34

Note. Exp. = Experimental.

^a Note that for reading climate only data from wave 2 and 3 are available for the experimental and control school (*n* = 81 and *n* = 88, respectively).

Table 1 presents the characteristics of the sample (i.e., observations) by school and school year. At the experimental school, a total of 128 observations were available from 72 students (1.8 observations per student on average) and at the control school a total of 133 student observations were available from 68 students (2.0 observations per student on average). The sample included children aged 7 to 13 years, with a mean age of 10.15 at the experimental school and 9.79 at the control school. At both schools, slightly more girls than boys participated in the study. In total, the sample consisted of 124 boys (47.5%) and 137 girls (52.5%). The educational level of the parents varied from 'no education' (given a score of 0) to 'vocational colleges/university' (given a score of 4; see also the section "Measures on parental educational level"). The total mean score on parental education level was 1.82, with parents of the experimental school scoring higher than those of the control school (2.19 versus 1.45), indicating that the parents of the students included in the study had a low educational level on average. This is in agreement with national statistics showing non-Western migrants having a relatively low education level compared to the native Dutch population (Gijsberts & Iedema, 2012). The mean scores of the experimental and control school students on reading climate at home were 2.30 and 2.34, respectively, which is not that favorable, considering that a score of 1 indicates the least reader-friendly climate at home and a score of 4 indicates the most reader-friendly climate (see also the section "Measures on reading climate").

The student observations of the two schools differed in parental educational level, the experimental school having a statistically significant lower level than the control school, $F(1, 259) = 21.57, p < .001$. The groups did not differ with respect to age, $F(1, 259) = 3.13, p = .078$, gender, $\chi^2(1, n = 261) = .09, p = .768$, and reading climate at home, $F(1, 167) = .16, p = .689$.

PROCEDURE

In April 2012 (during school year 2011/2012) and in November and December 2012 and 2013 (during school years 2012/2013 and 2013/2014, respectively), a student questionnaire was administered at both the experimental and control school to children attending grades 2 to 6. The survey used in this study, a national questionnaire on school libraries called the *Monitor the Library at School* (also referred to as "MQ"),⁴ was complemented by an additional questionnaire (also referred to as "AQ") during the last two waves. The MQ has been especially developed for the purpose of monitoring the effectiveness of the Dutch national Library at School program. This instrument includes questions about the students' reading attitude, reading behavior, and reading climate at home. The MQ was used at the experimental school as part of the Library at School program, and the control school also agreed to participate in the MQ. The AQ contains a more extensive set of questions and has been especially designed for the present study in order to get a fuller understanding of the students' reading attitude, leisure reading, and reading climate at home, taking into account questionnaire items used in previous research and following literature on survey research among children (e.g., Borgers & Hox, 2002; Borgers, Hox, & Sikkel, 2004; de Leeuw, 2011).

In the introductory part of the survey, the children were told that the questionnaire was not a test and that they could ask the teacher for help in case they would not understand a question. Most of the students of the experimental school filled out an online version of the questionnaire in a computer room. This happened in groups of up to eight students under the guidance of the researcher and/or the reading and media coach (and sometimes a teacher was present as well) who clarified questions whenever necessary. On request of a teacher, a few students filled out the questionnaire in the classroom, as this teacher preferred that these students did not leave the classroom the day the survey was being administered. As the control school did not have a separate room with computers, the school decided to administer the student questionnaires in the classrooms under the guidance of the teacher who clarified the questions whenever needed. However, there were only a limited number of computers in the classrooms and there was only a limited amount of time available to the teachers to help students. On request of these teachers, a paper and pencil version of the survey was made available for the control school for reasons of efficiency. In the school years 2011/2012 and 2012/2013, almost three-quarters of the control school students filled out the paper version; during the last wave all the control school students completed the paper version. At the control school, in total 22 student questionnaires were completed online (16.5%) and 111 on paper (83.5%). At the experimental school, in total, 122 digital questionnaires (95.3%) and 6 paper surveys were completed (4.7%).

A parental questionnaire was distributed at around about the same time the student questionnaires were administered (i.e., in April and May 2012, and in November and December 2012 and 2013). During the second and third wave, parents who wanted to complete the survey but were having trouble with the Dutch language could make use of help offered during planned

parent-teacher conferences afternoons and evenings. Help was provided by a researcher and librarians, including a person who could translate the survey for parents with a Moroccan background. For a smaller group of parents no translation was available. However, for many parents needing help, we got the impression that it was sufficient someone explaining the survey to them in Dutch, as they could understand spoken language, but were not (fully) able to read and understand the written survey. Some parents were also assisted by other persons, such as an older sibling or an uncle/aunt of the student who attended one of the schools or a neighbor. During the last wave of data collection, parents who had completed the survey received a gift card to the amount of €5,- to be spent at a large Dutch retail and drugstore chain.

MEASUREMENTS

Reading attitude. With regard to *reading attitude*, students were asked in the MQ to respond to the following question: “How do you feel about reading a book?” on a 4-point scale. The children could choose between ‘annoying’; ‘do not like it so much’; ‘quite like it; and ‘like it very much’. To measure reading attitude in more depth with the AQ, a scale in which both a *hedonic and utilitarian component* (i.e., enjoyable and useful, respectively) were represented was constructed on the basis of previous research (e.g., Stalpers 2005; Stokmans & Broeder, 2009). The students were asked what they thought of reading a book in their leisure time, followed by 10 items that each consisted of four answer categories out of which the children had to choose. The response options were semantic differentials: a rating scale with bipolar adjectives. Such a response scale has the advantage that it avoids “yeah-saying” and that both children who think positively about reading and children who think negatively about reading see their opinion explicitly stated in the scale (de Leeuw, 2011; Stalpers, 2005). Following literature on survey research among children (Borgers & Hox, 2002; Borgers et al., 2004; de Leeuw 2011), the response options were fully labeled and the children were deliberately not offered a neutral mid-point category. Five items addressed the hedonic aspect of reading attitude (e.g., ‘very boring’; ‘pretty boring’; ‘pretty exciting’; ‘very exciting’) and the other five items referred to the utilitarian aspect (e.g., ‘very important’; ‘pretty important’; ‘not that important’; ‘not important at all’). Six items started with the answer that represented the most positive attitude toward reading, while the other four items started with the most negative reading attitude. The items that started with the most positive or most negative attitude, addressing either the hedonic or utilitarian component, were mixed in the questionnaire. In the analyses, the items starting with the most positive attitudes were reverse coded, making sure that a higher score represented a more positive attitude. The mean score of all items (ranging from 1 to 4) formed the final reading attitude scale (with satisfactory reliability; Cronbach’s $\alpha = .88$) that was used in the analyses.

Reading behavior. *Reading frequency* was assessed in the MQ through the following question: “How often do you read a book for pleasure at home?”. The five response options were: ‘never’; ‘a couple of times a year’; ‘a couple of times a month’; ‘a couple of times a week’; and ‘every day’. In

the AQ, the students were asked in separate items how often they read: (a) storybooks (fiction), (b) non-fiction (informative) books, (c) picture books, (d) magazines, (e) comic books, and (f) poems and verses in their spare time, using the same answer categories as the MQ item. The mean score of the six items was used as a scale in the analyses (reliability just satisfactory; Cronbach’s $\alpha = .71$).

Diversity in reading preferences was assessed through the MQ. The students were presented with a list of subjects and they had to indicate which of these subjects they like to read about: love, sports, fairy tales, technology, history, school, creepy things, humor, nature, animals, other countries, war, and friendship. For the analyses, a final score was created by taking the sum of the number of topics the students liked (reliability satisfactory; Cronbach’s $\alpha = .73$). The higher the final score, the broader the students’ preferences in reading.

Reading duration was asked about in the AQ in one question with five answer categories. Students were asked how much time they spent reading a book per day during their leisure time and they were presented with pictures of clocks indicating the time to illustrate the response categories: ‘I don’t read’; ‘15 minutes’; ‘half an hour’; ‘45 minutes’; ‘one hour or longer’.

Background variables.

Gender. The schools’ student administration indicated whether a child is a boy or a girl.

Age. The students’ date of birth listed in the schools’ student administration was used to determine the age of the students during the different waves of data collection.

Parental education level. In the parental questionnaire, respondents were asked to report their and their partner’s highest completed educational level, both in the Netherlands and in the country of origin, by choosing between 10 and 9 categories, respectively. These options were derived from the Survey Integration Ethnic Minorities, a large-scale survey in the Netherlands that focuses on the integration of the four largest non-Western migrant groups in the Netherlands, and from the Survey Integration New Groups that addresses new migrant groups (Hilhorst, 2010). For the final parental educational level variable (ranging from 0 to 4), the highest completed educational level of either parent (or single parent) was assigned to the following categories: (a) no education, (b) primary education, (c) lbo/mavo (i.e., junior vocational training/junior general secondary education), (d) havo/vwo/mbo (i.e., senior general secondary education/pre-university education/senior vocational training), and (e) hbo/wo (i.e., vocational colleges/university). This grouping was based on a classification adopted by Statistics Netherlands and used in previous research (e.g., Gijsberts & Iedema, 2012; Kortlever & Lemmens, 2012), with the exception of the category ‘no education’ added in the present study to distinguish a group of parents with no or little experience with formal education. If not indicated by parents in the parental questionnaire, we used the information available in the schools’ student administration to determine the educational level of the parents.

Reading climate at home. The reading climate at home was assessed through a combination of three items included in the MQ and five items included in the AQ. In the MQ, the students were asked how often the following three situations happen: “My mother or father reads to me at home”;

“My mother or father talks to me about books”; and “My mother or father accompanies me to visit the library”. The answer options offered in the first and second waves differed somewhat from the ones offered in the third wave and were brought on the same 4-point scale (1 = *never*, 2 = *sometimes*, 3 = *regularly*, and 4 = *often*). The following five additional items were adapted from instruments previously used in reading research (Kraaykamp, 2003; Leseman & de Jong, 1998; Notten, 2011; Stalpers, 2005; Stokmans, 2007; van Elsäcker-Bok; Verboord, 2005): “I see my mother or father reading at home”; “My mother or father knows in what book I’m reading”; “My mother or father gives me a book as a present”; “My mother or father tells me which books are fun”; and “When I was a toddler, my mother or father read to me at home”. The four response categories were similar to those used for the MQ items. The final scale used in the analyses consisted of the mean score of all these items (with satisfactory reliability; Cronbach’s $\alpha = .81$), ranging from 1 (*never*) to 4 (*often*). As the three items only measured with the MQ during all waves appeared not to build up to a reliable scale on their own, and given that the five items measured with the AQ were only administered during the second and third wave, the reading climate variable is only available for these waves.⁵

Time. A time variable was constructed that indicated how many months a student had been attending the school at the time the measurements took place, counted from September 2011 (i.e., the opening of the school library), excluding the summer holiday months (July and August). For the experimental school, this time variable was used as a proxy for months of availability of the school library, whereas for the control school it was used for comparison, indicating how many months the students had been visiting the control school. The way of constructing the time variable was guided by the fact that the questionnaires were not administered at the same time points during the different school years and the fact that a considerable number of students entered the experimental school during the second wave of the study. The schools’ student administration, which listed when students enrolled in school, was used to construct the time variable.

ANALYSES

Given the hierarchical structure of the data, with the repeated measures of reading behavior and reading attitude (level 1) nested in the students (level 2), multilevel linear modeling was used to answer our research questions. Unlike more conventional statistical tests, multilevel modeling does not require independence of observations (Hox, 2002; Tabachnick & Fidell, 2007) and it gives more correct estimates than models that neglect the nested data structure (Notten & Kraaykamp, 2010). Moreover, in multilevel modeling there is no need for complete data over occasions. To account for different intervals between the repeated measures, random intercepts and random slopes were considered for modeling the covariance structure (Snijders & Bosker, 1999).

Our research questions were tested using different models. Model 1 addressed the effect of the school library on reading attitude (question 1) and reading behavior (question 2), while controlling for differences between the schools in parental educational level. In this model, an

interaction effect between school and the time variable was fitted, which indicated whether there was a difference in reading attitude and reading behavior between the experimental and control school students over time. A statistically significant interaction effect, with scores of students attending the experimental school increasing more, means there was a positive effect of the school library. Models 2, 3, 4, and 5 assessed whether the effects of the school library differed for categories of parental education level, gender, age,⁶ and reading climate at home, respectively (question 3). The effect of each factor was assessed in a sequential manner, whereby each effect is adjusted for all other effects added earlier to the model. In each of these models, we first examined whether there was a statistically significant main effect of the factor, indicating that this factor was a predictor of the outcome variable. In addition, for each factor, a three-way interaction effect was fitted (e.g., school \times time \times gender), with a statistically significant interaction effect meaning that the size of the effect of the school library differed for scores on this factor.

RESULTS

DESCRIPTIVES

Table 2 presents the means and standard deviations on reading attitude and reading behavior as assessed with the MQ and the AQ, broken down by school, with a higher score indicating a more positive reading attitude, more frequent and diverse reading, and more minutes of reading a day.

TABLE 2 MEANS AND SDS FOR READING ATTITUDE AND READING BEHAVIOR BY SCHOOL ($n = 261$)^a

	Experimental school			Control school		
	<i>n</i>	<i>Mean</i>	<i>SD</i>	<i>n</i>	<i>Mean</i>	<i>SD</i>
Monitor (MQ)						
Reading attitude	128	3.26	.69	133	3.17	.68
Reading frequency	128	3.95	1.14	133	4.12	.90
Diversity in reading preferences	128	4.31	2.98	133	4.79	2.89
Additional questionnaire (AQ)						
Reading attitude	93	3.20	.55	86	3.19	.54
Hedonic	93	3.09	.58	86	3.09	.63
Utilitarian	93	3.30	.57	86	3.29	.52
Reading frequency	93	3.12	.91	90	2.96	.85
Storybooks	93	3.80	1.23	90	3.87	1.03
Non-fiction books*	93	3.13	1.26	90	2.74	1.36
Picture books	93	2.57	1.58	90	2.30	1.47
Magazines	93	2.94	1.50	90	3.17	1.49
Comic books	93	3.63	1.22	90	3.48	1.42
Poems and verses* ^b	93	2.67	1.47	89	2.20	1.46
Reading duration	93	2.91	1.16	88	3.05	1.20

^a The number of student observations for the separate dependent variables are presented in the table.

^b After controlling for differences in parental educational level, the difference between the schools was no longer statistically significant.

* $p < .05$.

On average both the experimental and control school scored fairly high and they did not differ statistically significantly on most outcomes, even when taking into account differences in parental educational level. Thus, on average, the students of both schools had a quite positive reading attitude and read fairly often. The scores on the *reading attitude* scale of the AQ were close to the reading attitude scores on the MQ, although, within the AQ, the scores on the utilitarian subscale were somewhat higher than those on the hedonic subscale. The latter meaning that, on average, the students considered reading somewhat more useful than enjoyable. *Reading frequency* scores, however, were higher on the MQ than on the AQ. According to the MQ, students read about a couple of times a week on average, whereas according to the AQ measure, students read about a couple of times a month on average. This seems to be a consequence of the fact that in the AQ, the students were explicitly asked about reading materials that are generally read less often. As can be seen, for both schools, picture books and poems and verses were the least popular reading materials, whereas storybooks and comic books were the most popular.

With regard to *reading duration* (AQ) and *diversity in reading preferences* (MQ), children of both schools reported reading on average approximately half an hour a day and they liked four to five different topics on average (Table 2). In order to get more insight into the reading preferences of the students, the topics children liked to read about were sorted by popularity, as shown in Table 3. In general, the children preferred to read about sports, creepy things, friendship, animals, and humor, which are in the top five of both schools. At the bottom of the list were fairy tales, history, technology, and love. Students attending the experimental school more often preferred fairy tales, whereas the control school students more often preferred reading about creepy things, technology, and love. Subjects typically reported by boys were sports, technology, and war, whereas girls more

TABLE 3 READING PREFERENCES BY SCHOOL^a

	Total (n = 261)		Experimental school (n = 128)		Control school (n = 133)	
	Order	% yes	Order	% yes	Order	% yes
Sports	1	52.1	1	52.3	2	51.9
Creepy things**	2	52.1	3	43.8	1	60.2
Friendship	3	47.9	2	51.6	5	44.4
Animals	4	44.4	4	43.0	3	45.9
Humor	5	42.1	5	38.3	4	45.9
School	6	32.2	6	35.2	8	29.3
War	7	31.0	10	25.8	6	36.1
Other countries	8	29.9	8	30.5	9	29.3
Nature	9	29.1	9	27.3	7	30.8
Fairy tales*	10	27.6	7	33.6	13	21.8
History	11	24.1	11	21.1	12	27.1
Technology*	12	21.8	12	15.6	11	27.8
Love**	13	21.1	13	13.3	10	28.6

^a The topics are ordered by popularity, with ' % yes ' indicating the percentage of students who liked to read about the topic. *p < .05. **p < .01.

often preferred reading about love, fairy tales, school, animals, and friendship (gender differences not depicted in Table 3).

Note that the descriptive statistics discussed in this section represent the mean results for the whole period of the study, which does not say anything about the development over time. As we are interested in whether or not scores on reading attitude and reading behavior increase due to (more months of) school library usage, multilevel analyses were conducted taking this time factor into account. The results will be discussed in the next sections.

EFFECTS ON READING ATTITUDE

In order to test for an effect of the school library on reading attitude, as measured with the MQ, a model was fitted with an interaction effect between school and the time variable (Model 1, Table 4). This effect parameter indicates the difference between the control and experimental school over time. Although the estimate was positive for the experimental school – indicating

TABLE 4 MULTILEVEL REGRESSION OF READING ATTITUDE (MONITOR)

	Model 1 (effect library)		Model 2 (effect education)		Model 3 (effect gender)		Model 4 (effect age)		Model 5 (effect reading climate)	
	F	p	F	p	F	p	F	p	F	p
Intercept	.02	.88	.03	.86	.01	.92	.00	.99	.06	.81
Time	.26	.61	.30	.58	.19	.66	.02	.89	.13	.72
School	1.61	.21	1.69	.20	1.79	.18	1.83	.18	1.91	.17
School×Time	1.20	.28	1.22	.27	1.32	.25	1.15	.29	2.13	.15
Education	1.40	.24	1.68	.20	1.49	.22	1.07	.30	2.90+	.09
School×Time×Education			.39	.68						
Gender					3.90+	.05				
School×Time×Gender					1.22	.30				
Age							21.96***	.00		
School×Time×Age							1.36	.56		
Reading climate									19.46***	.00
School×Time×Reading climate									.55	.58
n	261		261		261		261		169	
Parameters	7		9		10		10		10	
-2LogL	750.21		764.90		759.14		744.80		486.14	

Note. Because of iterative estimation procedures, combined with a relatively small n, (little) variations in p-values are possible in the different models (1-4) for the variables held constant: time, school, School×Time, and education. ***p < .001. +p < .1.

an increase in reading attitude over time compared to the control school –, the difference was not statistically significant $F(1, 235) = 1.20, p = .275$. In Models 2 to 5 main effects of gender, age, educational level, and reading climate at home were added as well as their interaction with time and school, to examine whether the effect of the school library depended on these factors. The results showed that girls ($Mean = 3.31, SE = .07$) had a more positive reading attitude on average than boys ($Mean = 3.12, SE = .06$), although the main effect of gender was not statistically significant, $F(1, 127) = 3.90, p = .050$. A negative main effect was found for age, $F(1, 214) = 21.96, p < .001$, and a positive main effect was found for reading climate at home, $F(1, 151) = 19.46, p < .001$, indicating that younger children and children from families with a higher score on the reading climate scale had a more positive reading attitude. No statistically significant three-way interaction effects were found, suggesting that the effect of the school library did not depend on the factors included in the models.

We conducted the same analyses for the *reading attitude* scale as assessed with the AQ administered in the second and third wave (not in Table⁷). Here, we did find a statistically significant interaction effect between school and time, $F(1, 91) = 4.47, p = .037$, with attitude scores of the children from the experimental school increasing more than those of the students attending the control school. This means there was a positive effect of the school library. We also found a positive main effect of reading climate at home, $F(1, 130) = 107, p < .001$. Analyses on the subscales of reading attitude revealed that the interaction effect between school and the time variable was statistically significant for the utilitarian aspect, $F(1, 94) = 5.36, p = .023$, but not for the hedonic aspect, $F(1, 89) = 2.64, p = .108$, indicating that over time, students attending the experimental school considered reading more useful than students visiting the control school. Both subscales showed a positive main effect of reading climate: $F(1, 134) = 33.19, p < .001$, and $F(1, 131) = 36.28, p < .001$, respectively. The main effect of gender was also statistically significant for the hedonic subscale, $F(1, 99) = 4.08, p = .046$, with girls ($Mean = 3.20, SE = .07$) reporting a more positive reading attitude than boys ($Mean = 3.01, SE = .07$).

All in all, with respect to our first research question, we were not able to demonstrate an effect of the school library on reading attitude as measured with the MQ, but we did find a positive effect of the school library on reading attitude – more specifically, on the utilitarian dimension – as measured more extensively with the AQ. With respect to our third research question, we did not find that the effect of the school library on reading attitude differed for categories of gender, age, educational level, and reading climate at home, although we did find that children from families with a more reader-friendly climate, younger children, and girls had a more positive reading attitude.

EFFECTS ON READING BEHAVIOR

The effect of the school library on *reading frequency* (MQ) was estimated similarly to reading attitude (Model 1, Table 5). The interaction effect between school and time was not statistically

TABLE 5 MULTILEVEL REGRESSION OF READING FREQUENCY (MONITOR)

	Model 1 (effect library)		Model 2 (effect education)		Model 3 (effect gender)		Model 4 (effect age)		Model 5 (effect reading climate)	
	F	p	F	p	F	p	F	p	F	p
Intercept	.05	.82	.06	.81	.04	.84	.14	.71	.02	.88
Time	.00	.98	.00	.95	.00	.95	.04	.85	.06	.80
School	1.79	.18	1.67	.20	1.69	.20	1.54	.22	1.39	.24
School×Time	.54	.46	.53	.47	.51	.48	.80	.37	.66	.42
Education	.94	.33	1.04	.31	.88	.35	1.06	.31	2.45	.12
School×Time×Education			.61	.55						
Gender					.19	.66				
School×Time×Gender					.46	.63				
Age							.51	.48		
School×Time×Age							1.43	.24		
Reading climate									15.19***	.00
School×Time×Reading climate									.30	.74
n	261		261		261		261		169	
Parameters	8		10		11		11		11	
-2LogL	739.57		754.23		752.45		757.32		487.37	

Note. Because of iterative estimation procedures, combined with a relatively small *n*, (little) variations in *p*-values are possible in the different models (1-4) for the variables held constant: time, school, School×Time, and education.
****p* < .001.

significant, $F(1, 135) = .54, p = .463$, meaning that the school library did not have an effect on the students' reading frequency. Furthermore, in Models 2, 3, and 4 no main effects of educational level, gender and age were found, nor interaction effects of these factors with school and time. The only statistically significant effect found for reading frequency as measured with the MQ was a main effect of reading climate at home, $F(1, 161) = 15.19, p < .001$ (Model 5), with children from families with a more reader-friendly climate reporting more reading.

The main effect of reading climate at home was also positive and statistically significant for *reading frequency* as assessed through the AQ in the second and third wave, $F(1, 148) = 63.06, p < .001$ (not in Table⁷). For this dependent variable, we also found that children of both schools) from lower educated families scored higher over time (i.e., three-way interaction effect of school, time, and educational level; $F(2, 130) = 3.43, p = .035$). In addition, a statistically significant interaction effect was found between school, time, and age, $F(2, 134) = 3.74, p = .026$: At the experimental school, the reading frequency of older children increased more over time as compared to younger children, whereas at the control school, the reading frequency of younger



children increased more over time as compared to older children. There was no interaction effect between school and the time variable, $F(1, 169) = .92, p = .339$, indicating there was no effect of the school library on reading frequency (AQ).

When analyzing the students' reading frequency separately for the six *different types of reading materials* (AQ), no effect of the school library was found (in Model 1) for storybooks, $F(1, 171) = .16, p = .688$; non-fiction books, $F(1, 171) = 3.01, p = .084$; picture books, $F(1, 170) = 1.50, p = .222$; magazines, $F(1, 170) = .03, p = .854$; and comics, $F(1, 170) = 3.38, p = .068$. The interaction effect between school and the time variable was only statistically significant for poems and verses, $F(1, 168) = 4.05, p = .046$, with only students of the control school showing a decline over time in reading this type of book. Although boys and girls did not differ on the total reading frequency scale, we did find main effects of gender when examining the different reading materials: Girls ($Mean = 2.87, SE = .16$) read verses and poems more often than boys ($Mean = 2.16, SE = .16$), $F(1, 109) = 9.13, p = .003$, whereas boys ($Mean = 3.67, SE = .14$) read comic books more often than girls ($Mean = 3.28, SE = .14$), $F(1, 126) = 7.33, p = .008$. Furthermore, for magazines there was a positive main effect of age $F(1, 153) = 8.86, p = .003$. Older children read this type of reading material more often than younger students. The main effect of reading climate was statistically significant for all types of reading materials, with students from a more reader-friendly home environment having a higher reading frequency.

With respect to *diversity of reading preferences* (MQ), no interaction effect between school and time was discovered, $F(1, 113) = 1.68, p = .198$, meaning that no effect of the school library was discerned. There was a positive main effect of reading climate, $F(1, 150) = 4.03, p = .047$. Similar results were found for *reading duration* (AQ) regarding the effect of the school library, $F(1, 168) = 1.89, p = .172$, and the effect of reading climate, $F(1, 151) = 20.86, p < .001$.

Thus, with respect to our second research question about the effectiveness of the school library on reading behavior, our results revealed no effect on reading frequency and diversity in reading preferences as measured with the MQ, nor was there an effect on reading behavior as assessed through the reading frequency scale and the reading duration item of the AQ. With regard to our third research question, we found that at the experimental school the reading frequency (AQ) of older children increased more over time as compared to younger children, whereas the opposite was true for control school students. In general, magazines were more frequently read by older students than younger students, and girls read verses and poems more often than boys, whereas boys read comics more often. Moreover, reading climate at home was an important predictor of all measures of reading behavior.

DISCUSSION

Using a longitudinal quasi-experimental design involving an experimental school and a control school, the present study examined whether an integrated library facility in a Dutch primary school

had an effect on the reading attitude and reading behavior of non-Western migrant students (grades 2 to 6). Firstly, we investigated whether the school library had an effect on the *attitude toward reading* of non-Western migrant students. Secondly, we analyzed whether the school library has an effect on the *reading behavior* in non-Western migrant students. Thirdly, we examined whether the effects of a school library on the reading attitude and reading behavior of non-Western migrant students *differed for categories of gender, age, parental educational level, and reading climate at home*.

The results showed that students in the two schools did not differ in their *reading attitude* over time, as measured by a national monitor questionnaire during three school years. This indicates that no statistically significant effect of the school library could be discovered on the degree in which students think reading is fun. On the other hand, a positive effect of the school library was revealed on reading attitude as measured during two school years in greater depth with an additional questionnaire designed for this study, with two subscales, a *hedonic* and *utilitarian* one (i.e., enjoyable and useful, respectively). It appeared that the utilitarian subscale was for the most part responsible for this result: Students attending the experimental school considered reading increasingly more useful than children visiting the control school. Earlier research in the Netherlands (Stalpers, 2005; Stokmans, 2007) has indicated that both the hedonic and utilitarian aspect of reading attitude are related to reading behavior, although the hedonic component is a stronger predictor.

With regard to *reading frequency*, measured with the monitor and the additional questionnaire, no positive effect of the school library was found, nor with respect to *diversity in reading preferences* (monitor) and *reading duration* (additional questionnaire). This seems to be a cause of concern given the importance of reducing learning disadvantages among non-Western migrant children, which is suggested to be possible through more reading. A possible explanation for our findings may follow from the fact that the students of the experimental school were not allowed to take home the school library books they borrowed during school hours (a decision made by the school management). Moreover, it should be noted that – in line with national statistics (Broekhof & Broek, 2013; Witte and van Nood, 2012) – the students' scores on both reading frequency and reading attitude were quite high, leaving little room for improvement (*ceiling effect*).

The third focus was on gender, age, parental educational level, and reading climate at home and whether the effects of the school library were differentiated by these factors. For the monitor, no interaction effects were found, indicating that the effect of the school library on reading attitude and reading behavior did not depend on these factors. For reading frequency assessed in more depth with the additional questionnaire, we found that at the experimental school, the reading frequency of older children – who generally read less often than younger children (e.g., Huysmans, 2013) – increased more over time as compared to younger children, whereas the opposite was true for the control school.



Furthermore, in line with the literature (e.g., Clark & Foster, 2005; Meelissen et al., 2012; Witte & van Nood, 2012), younger children and girls had a more positive reading attitude as assessed with the monitor survey (although the latter effect was just not statistically significant). Girls also scored higher on the hedonic subscale of the additional questionnaire than boys. In general, girls more often preferred reading about love, fairy tales, school, animals, and friendship, whereas topics typically preferred by boys were sports, technology, and war. Girls read verses and poems more often than boys, whereas the opposite was true for comic books. Magazines were more frequently read by older than by younger students. School libraries seem to need to provide a wide range of reading materials covering a wide variety of topics in order to meet the preferences of all age groups and both boys and girls.

The final factor, reading climate at home, was found to be an important predictor of reading attitude and reading behavior, regardless of the measurement instrument. This result corresponds with existing research (e.g., Kraaykamp, 2002, 2003; Mol & Bus, 2011b; Notten, 2011; van Steensel, 2006; Verboord, 2003) and it stresses the importance of (non-Western migrant) parents as important partners for school libraries when it comes to reading promotion. It has been suggested that parents with a non-Western migrant background often feel less responsible for actively stimulating their child's cognitive development and that there often is a barrier between them and the school (Beks & de Natris, 2008). Increased effort may be needed for school libraries to reach and work together with these parents to inform and support them.

Although, given its focus on migrant students in particular, the present study contributes to the literature on the effectiveness of school libraries, several limitations should be noted. For example, the number of participants/observations in the present study was limited, resulting in a low statistical power to detect statistically significant differences. This means that there may be effects of the school library for non-Western migrant children that could not be demonstrated in the present study. Furthermore, as in many Dutch schools, books were also present at the control school, although the collection was not as large, varied, and up-to-date as in the experimental school. Perhaps more effects of the school library would be found if there had been a larger difference in the presence of reading materials between the two schools.

Moreover, reading attitude and reading frequency were measured via self-reports and it is not certain that the children's answers completely covered their actual reading behavior or attitude, as bias may occur caused by factors such as social desirability and insufficient understanding. Perhaps students were more inclined to respond positively to the questions with a teacher, researcher, and/or reading and media coach around (despite being told the survey was not a test), and some (younger) children may not have completely understood everything (despite help offered to them). However, this holds true for both schools and we have no reason to assume this applies more to one school or the other. The students' scores on reading attitude and behavior were also in line with national statistics, the reliability of the scales was satisfactory, and literature

on questionnaire research with children suggests that generally from seven years onward, children can complete a self-report; children below the age of seven do not have sufficient cognitive skills to be adequately questioned (Borgers & Hox, 2002; Borgers et al., 2004; de Leeuw, 2011). Moreover, 'reading' could possibly have included digital reading for some of the children, as the reading source (i.e., paper based or electronic books) was not specified in the phrasing of the items. However, reading digital books is not that common (yet) among primary school students. A study on the reading behavior of youth in the Netherlands showed that, in 2012, only 3% of children aged 7 to 15 years reported reading book apps (e-books) during leisure time (Huysmans, 2013). Furthermore, at the experimental school most student questionnaires were filled in online, whereas at the control school most surveys were completed on paper. We cannot rule out that this may have slightly affected the results.⁸ With regard to the parental questionnaire, we cannot be sure that every parent filled it in with a complete understanding.

It should also be kept in mind that the implementation of the school library program at the experimental school could be improved. Library books borrowed during school hours were not allowed to be taken home, while it is suggested that access to books is of importance for more reading and a more positive reading attitude (Krashen, 2004b; Krashen et al., 2012; Lindsay, 2010). This relationship is also supported by the data of our own research project: Students who reported having more books at home (see also Note 5) read more frequently, invested more time in reading, and liked to read about a broader variety of subjects than children with fewer books at home, and they considered reading as more fun as well (Kleijnen, Huysmans, Ligtoet, & Elbers, 2015c). Also, the finding that children of the experimental school had less books at home on average than children attending the control school makes it even more plausible that taking library books home could have resulted in a positive effect of the school library on the reading behavior and attitude of the experimental school students.

All in all, the present study among non-Western migrant students showed no effect of a school library on the students' reading behavior and the degree in which they thought reading is fun. Over time, students attending the experimental school did consider reading more useful than students visiting the control school. Although few effects were found in the current study, it cannot be said for sure that school libraries are barely effective for students with a non-Western migrant background, as shortcomings of the present study may have affected the findings in a negative sense. Effects are more easily detected in research involving a larger sample, and, possibly, a higher impact of the school library can be found in a study with a greater difference in treatment between the control and experimental group, and an optimal implementation of the school library program. It would also be interesting to compare the effects for non-Western migrant children and native Dutch children in future research. The present study clearly demonstrates that reading climate at home is an important predictor of both reading attitude and reading behavior. By providing non-Western migrant children with access to books that can be taken home and by

informing and supporting parents, school libraries may enhance the students' reading climate at home, and, thereby, contribute to more reading and a more positive reading attitude. Further research is needed to examine this premise.

Notes

1. See www.debibliotheekopschool.nl
2. According to Statistics Netherlands a person is considered migrant if at least one parent was born outside the Netherlands, with a further distinction being made between migrants originating from Western countries – Europe (excluding Turkey), North America, Oceania, Indonesia, and Japan – and migrants coming from non-Western countries – Turkey, Africa, Latin America, and the rest of Asia (Alders, 2003).
3. In the Netherlands, the central government sets quality standards and learning objectives that apply to all primary schools, including the ones involved in the present study. The Inspectorate of Education monitors the schools' compliance with central rules and regulations, and the quality of education provided by the schools (Nusche, Braun, Halász, & Santiago, 2014).
4. More information (in Dutch) about the monitor can be found at www.debibliotheekopschool.nl
5. In the monitor, children were also asked to indicate how many books they had themselves, by choosing between five answer categories: '0', '1-20', '21-50', '51-100', and 'more than 100'. In general, children of the control school had more books at home ($Mean = 2.79, SD = .98$) than children attending the experimental school ($Mean = 2.43, SD = .86$), $F(1,259) = 9.96, p = .002$. As this item refers to the availability of reading materials at home, it can also be considered as a measure of reading climate at home. However, given that the response options substantially differed from the other eight items addressing reading climate at home, we did not consider including this item in the reading climate scale as well. Moreover, we preferred not to include this single item separately in the analyses for the sake of parsimony. Correlation of the item with the reading climate at home scale was $r = .26, p = .001$.
6. Because of the way the study was designed, with an influx of new subjects and outflow after the final grade during the years the study was in the field, there is no artificial (almost) perfect relationship between 'time' and 'age'. For all children, the time variable indicates the number of months between the date of a measurement occasion and September 2011 (or a later date in case a student entered one of the schools after September 2011), regardless of age. This means, for example, that during the third measurement occasion at the beginning of November 2013, both children aged 8 years and children aged 12 years had been visiting the experimental or control school for 22 months.
7. The results of the multilevel analyses conducted on the data from the AQ are discussed in the text only in order to avoid presenting two tables with outcomes of multilevel analyses on a similar dependent variable (i.e., reading attitude and reading frequency as measured with (a) the MQ and (b) the AQ). We have chosen to present the results of the analyses on data from the MQ in tables, since this instrument was administered during all the waves of our study.
8. Research on effects of survey modes (performed among older respondents, in other settings, and using other measures) comparing paper-based administration methods with online administrations methods has reported somewhat mixed findings (Carini, Hayek, Kuh, Kennedy, & Ouimet, 2003). Hardré, Crowson, and Xie (2010) found that scores of respondents in a paper-based condition were slightly higher than the scores of those in a webbased condition, whereas the opposite was found in a study by Carini et al. (2003). Carini et al. (2003) have indicated that mode effects were generally small, and other studies (Hardré et al., 2007, 2010) found no effect of the administrative method on the reliability of the measures.

CHAPTER 4

EFFECT OF A SCHOOL LIBRARY ON THE READING AND LANGUAGE SKILLS IN NON-WESTERN MIGRANT STUDENTS



ABSTRACT

In the Netherlands, the educational performance of students with a non-Western background lags behind that of native Dutch students, in particular with regard to language ability and reading proficiency. Using a longitudinal design involving an experimental and a control school, the present study examined whether the integration of a library facility in a Dutch primary school's curriculum leads to better reading and language skills in non-Western migrant students (grades 2 to 6). The results showed a statistically significant positive effect of the school library program on the students' vocabulary level, with a higher increase in vocabulary test scores over time for the experimental school than for the control school. No effects were found with respect to the students' reading comprehension and spelling skills. A more optimal implementation of the school library program might well have led to stronger effects.

A slightly modified version of this chapter has been submitted for publication as:

Kleijnen, E., Huysmans, F., Ligtvoet, R., & Elbers, E. Effect of a school library on the reading and language skills in non-Western migrant students.

The importance of good language proficiency and reading ability for participating successfully in modern society has been well established (National Endowment for the Arts [NEA], 2007; Vernooy, 2009). There is no doubt that these skills are crucial for educational success and post-school opportunities (McGeown, Lynne, Griffiths, & Stothard, 2014). To understand and learn the material taught in class, students need good reading comprehension proficiency and an adequate vocabulary (Mullis, Martin, Foy, & Drucker, 2012; van Berkel et al., 2010). Research has shown that children with higher language scores also perform better in other school areas, such as math and general knowledge of the world (Kortlever & Lemmens, 2012), whereas children with language disadvantages often face problems in many school subjects (Prenger, 2005). Poor readers are also more likely to repeat a class and to drop out of high school (NEA, 2007; Vernooy, 2009). Moreover, low-ability readers do less well in the job market: Poor reading proficiency strongly correlates with lower wages, lack of employment, and fewer opportunities for career growth. Good readers, on the other hand, have more financially rewarding jobs and more opportunities for advancement (NEA, 2007). Individuals with better language and reading skills have been shown to be healthier as well, and they are more likely to be socially involved and politically engaged (DeWalt & Hink, 2009; NEA, 2007). In addition, a high literacy rate is of great importance to a country's economic growth (Coulombe, Tremblay, & Marchand, 2004; Organisation for Economic Co-operation and Development [OECD], 2010).

Obviously, not every child has sufficient language and reading skills. If we consider the situation in the Netherlands, a highly developed Western country, only one-third of third grade students achieve the standard 'sufficient' for text comprehension (van Berkel, Krom, Heesters, van der Schoot, & Hemker, 2007), approximately a quarter of the students finish primary education with insufficient technical reading ability¹ (Vernooy, 2009), and almost 14% of children aged 15 can be considered low-literate (Kordes, Bolsinova, Limpens, & Stolwijk, 2013), although, internationally, students in Dutch primary schools on average perform pretty well when it comes to reading (Meelissen et al., 2012; Mullis et al., 2012). There are groups of students who in particular experience difficulties in developing good language skills and reading proficiency. An urgent issue in the Netherlands – often observed in Western countries with non-Western migrant groups – providing a case in point is the ethnic inequality in academic achievement (Gijsberts & Iedema, 2012; Schnepf, 2007).

Since the 1960s, people have migrated to the Netherlands in large numbers (Herweijer, 2009). The majority of these immigrants came from the Mediterranean area, mainly from Turkey and from rural areas in Morocco – where Berber is spoken, a non-scripted language –, or came from the former Dutch colonies Surinam and Dutch Antilles – areas where Dutch is still the official language, although a different language is often spoken at home. Many immigrants have settled permanently in the Netherlands with their families (Scheele, 2010; van Elsäcker-Bok, 2002). In 2015, the Netherlands counted more than 2.0 million non-Western migrants², making up 12.1% of the total



population. The largest groups were migrants from Turkish, Moroccan, Surinamese, and Antillean origin (Statistics Netherlands, 2015). The migration flows have impacted on the composition of the school populations and recent statistics indicate that, in 2014, nearly 17% of the primary school aged students (4-12 years) had a non-Western ethnic-cultural background. The vast majority of these non-Western migrant children (91.6%) were born in the Netherlands (Statistics Netherlands, 2015).

Studies have clearly shown that, generally speaking, the educational performance of non-Western migrant students falls behind, in particular with regard to Dutch language ability and reading proficiency. This holds true for vocabulary, reading comprehension skills, and spelling skills, but not for their technical reading level (e.g., Appel, Kuiken, & Vermeer, 2001; Bonset & Hoogeveen, 2009, 2012; Driessen & Merry, 2013; Gijsberts & Iedema, 2012; Netten, 2014). The disadvantages of non-Western migrant children are already manifest when entering primary school and continue throughout primary education and beyond, with girls performing better on language than boys (Gijsberts & Iedema, 2012; Herweijer, 2009). Herweijer (2009) has reported that in kindergarten, students with a non-Western background not only lag behind native Dutch children from parents with a secondary or higher education background, but also – albeit to a lesser extent – relative to native Dutch students from low-educated families, who themselves lag behind native Dutch children from higher educated families as well. At the end of primary education, students with a Turkish, Moroccan, and Antillean background have a language disadvantage of approximately two years on average (Herweijer, 2009). Although the school performance of non-Western migrant students has improved over the years, there is still a substantial gap with their native peers (Gijsberts & Iedema, 2012).

In theories about this educational inequality, the academic achievement of migrant students is often linked to family characteristics. In general, non-Western migrant children grow up in families with a relatively weak socio-economic status (SES), as indicated by their lower parental educational level, lower income, and higher unemployment rate relative to native Dutch families (Herweijer, 2009). A weaker SES is, also among native Dutch students, related to lower school performance (Gijsberts & Iedema, 2012; Herweijer, 2009). Furthermore, it has been suggested that non-Western migrant parents often feel less responsible for actively stimulating the cognitive development of their children (Beks & de Natris, 2008), and migrant children are often less likely to be read to, have fewer reading materials at home, and their parents are less inclined to read themselves (de Vries, 2007; Hermans, 2002; Scheele, 2010; van Steensel, 2006).

Another important factor is that children with a non-Western background are often partly or entirely raised in another language than the Dutch language (Scheele, 2010). Being raised in bilingual migrant families is associated with less language input per language, as the time available for language interactions has to be divided over both the first and second language (Scheele, 2010). It has been suggested that competition between the two languages negatively

affects the development of bilingual language acquisition. On the other hand, bilingualism has also been reported to come with cognitive advantages such as enhanced metalinguistic awareness and executive control skills, which can support learning a second language (Janssen, Bosman, & Leseman, 2013; Scheele, 2010). Following the interdependence hypothesis (cf. Cummins, 1979, 2000), languages share common underlying proficiencies, consisting of skills related to reading, writing, and speaking, that can be transferred to a second language once acquired in one language (Elbers, 2010; Genesee, Geva, Dressler, & Kamil, 2006). Cummins made a distinction between basic interpersonal communicative skills (BICS) and cognitive academic language proficiency (CALP), which can be considered as informal everyday language and formal language demanded in the classroom, respectively (Elbers, 2010; Kekic, 2012). Research has shown that a lower SES is related to a lower quality and quantity of language input (i.e., less CALP stimulating input), making (native Dutch and migrant) children from low-SES families less well prepared for school (Elbers, 2012; Kekic, 2012). For non-Western migrant children, often growing up in low SES families, a less well developed CALP in the first language hampers CALP in Dutch, which is important for success in school (Kekic, 2012). Given that SES is related to academic language use at home, one may expect that migrant children from families with Dutch as household language – who are more likely to have higher educated parents than children from parents using a non-Dutch language at home (Turkenburg & Gijsberts, 2007) – would perform better at school. In line with this, several Dutch studies involving household language have indicated that usage of a non-Dutch language was negatively related to migrant children's language and reading test scores, compared to usage of the Dutch language (Hartgers, 2012; Herweijer, 2009), often also, although to a lesser degree, when controlling for confounding factors including parental educational level (Hemker & van Weerden, 2014; van Weerden & Hemker, 2012).

The present study aims to investigate whether language and reading skills of non-Western migrant children can be improved through a school library. In the Netherlands, public libraries often work closely with educational institutions, and several national reading promotion programs have been developed (Bron & Langendonk, 2015; Kasperkovitz, van Tits, & von der Fuhr, 2009). Part of this is *the Library at School* program, started in 2009, which seeks to promote reading among students by creating high quality libraries in schools and improving the collaboration between public libraries and schools (Broekhof, 2015; Bron & Langendonk, 2015). According to recent statistics, 74% of all library organizations participated in this program in 2014, involving 36% of all primary schools (Bron & Langendonk, 2015; van Dam & Heideman, 2015). An important objective of the school library program is improving the students' language development and reading proficiency (Huysmans, Kleijnen, Broekhof, & van Dalen, 2013; van Dam & Heideman, 2015). The rationale behind the structural cooperation between public libraries and schools is provided by evidence from studies on the relationship between reading behavior and language and reading skills (Broekhof, 2015), including reading comprehension, vocabulary, grammar, spelling,



and technical reading (Broekhof, 2015; Clark & Douglas, 2011; Gille, Loijens, Noijons, & Zwitser, 2010; Krashen, 2004b; Mol & Bus, 2011a, 2011b; Mullis et al., 2012; NEA, 2007).

Since the 1960s, evidence of the impact school libraries have on student achievement has been accumulating outside the Netherlands (Roberson, Schweinle, & Applin, 2003; Williams, Wavell, & Morrison, 2013). Lance, one of the most prominent researchers in this field, began his studies in the early 1990s. He found in his first study, the so-called Colorado Study, that the size of the school library (in terms of its collection and staff) was positively related to reading test scores of primary and secondary school students, as assessed through the standardized Iowa Test of Basic Skills (ITBS) and Tests of achievement and Proficiency (TAP; Lance, Welborn, & Hamilton-Pennell, 1993). Since then, he and other researchers have begun adding to this work, the majority of the impact studies having been carried out in the United States (Williams et al., 2013). Subsequent studies in Colorado and other American states, as well as research conducted in other countries, such as Australia, England, and Scotland, have consistently shown that school libraries were positively linked to student achievement (Boelens, 2010; Clark, 2010; Hay, 2003; Lonsdale, 2003; Softlink, 2012; Williams & Wavell, 2001; Williams et al., 2013). In many studies, tests were used to assess student achievement (e.g., Colorado Student Assessment Program [CSAP], Pennsylvania System of School Assessment [PSSA], and National Assessment Program – Literacy and Numeracy [NAPLAN]), frequently focusing on the reading subtest – often measuring reading comprehension – and in some cases also on test components covering subjects such as writing, math, and science. Other instruments were used as well, such as surveys, interviews, and focus groups (Williams et al., 2013). Reviews of school library impact studies have clearly identified library features that contribute to higher student achievement, such as large and up-to-date collections, the presence of qualified, full-time school librarians and appropriate support staff, collaboration with teaching colleagues, flexible library access, networked technology, and funding (Kachel, 2013; Lonsdale, 2003; Scholastic, 2008; Williams & Wavell, 2001; Williams et al., 2013).

Dutch research on the effects of school libraries on student achievement is scarce, but also suggests positive outcomes. Recently, Nielen and Bus (2015) compared 31 schools that had implemented the Dutch national Library at School program with 10 schools that did not take part in this program. Their results indicated that students (fourth and fifth graders) attending the experimental schools achieved higher scores on a reading comprehension test.

Little is known about the effectiveness of school libraries on ethnic minority students in particular, as many impact studies examined children in general and did not explicitly focus on students with a migrant background (Kleijnen, Huysmans, & Elbers, 2015a). Several American studies did control for the students' racial or ethnic background and found that linkages appeared to persist between attributes of school libraries and higher test scores (on standardized tests, such as the ISAT assessing reading comprehension and vocabulary; Burgin & Bracy, 2003; Lance, Rodney, & Hamilton-Pennell, 2005; Michie & Chaney, 2009), which seems to entail that school

libraries' "success factors" apply to students from various ethnic/racial groups (at least in the context of this research). This corresponds with the findings of Lance and Schwarz (2012) who examined the impact of characteristics of school library programs in Pennsylvania on reading scores of selected student cohorts that tend to experience achievement gaps. Reading ability was assessed through the reading test of the Pennsylvania System of School Assessment (PSSA), consisting of two categories: comprehension and reading skills, and interpretation and analysis of fictional and nonfictional texts (Pennsylvania Department of Education, n.d.). Lance and Schwarz indicated that Hispanic and African American students benefited proportionally more from strong school library programs than did students in general. This suggests that adequate school libraries can contribute to narrow the achievement gap between advantaged and disadvantaged students (Williams et al., 2013).

However, it is not clear whether these findings apply across different educational and cultural contexts. Migrant groups in the Netherlands are not readily comparable with ethnic minorities in a country like the United States. For example, the primary language of the majority of Moroccan-Dutch families is Berber, which, until recently, was a non-scripted language (Scheele, 2010), which is completely different from the situation of Hispanics and African Americans in the United States (Kleijnen, Huysmans, Ligtvoet, & Elbers, 2015b). Moreover, the implementation of school library programs, including the role of the school librarian, can differ across countries (Brabantse Netwerk Bibliotheek, 2013). In line with this, it has been suggested that research carried out outside the Netherlands cannot provide results that are valid one-on-one to the Dutch situation (Veenstra, 1999). In the Netherlands, no studies have been conducted on the effect of school libraries on the school performance of non-Western migrant students in particular. In addition, literature on the role of the home environment, schools, and libraries, which can give more insight into the possible effects of school libraries on these children in the Netherlands, is not consistent (Kleijnen et al., 2015a). Gaps in existing research need to be bridged in order to guide effective policies and practices around reducing educational inequalities through reading promotion.

PRESENT STUDY

In the current longitudinal study, involving both an experimental and a control school, we examined whether the integration of a library facility in a Dutch primary school's curriculum leads to better reading and language skills in students with a non-Western background. We addressed three important aspects of reading and language ability: vocabulary, reading comprehension, and spelling. On average, non-Western migrant students attain lower scores on these aspects than their native Dutch peers, unlike technical reading, and these three elements are (next to writing skills) part of the language element of the *Cito-eindtoets*, a national test taken at the end of primary school, which plays an important role in determining which secondary education track students



will follow (Herweijer, 2009; van Boxtel, Engelen, & de Wijs, 2010). The current study addressed the following research questions:

1. Does a school library have an effect on the *vocabulary level* of non-Western migrant students?
2. Does a school library have an effect on the *reading comprehension skills* of non-Western migrant students?
3. Does a school library have an effect on the *spelling skills* of non-Western migrant students?
4. Are the effects of a school library on the vocabulary, reading comprehension, and spelling skills of non-Western migrant students *moderated by gender, age, parental educational level, reading climate at home, and language spoken with parents*?

With regard to the first three questions, we hypothesized that the children who attended the experimental school would show more improvement in their vocabulary level, reading comprehension skills, and spelling skills over time than the children visiting the control school, as the library facility (and school libraries in general) was established in the belief that it positively impacts the students' language and reading skills. Moreover, research has shown that school libraries can contribute to higher reading test scores and that reading behavior, which the school library program seeks to promote, is found to be positively related to vocabulary, reading comprehension, and spelling skills. With respect to the fourth research question, we expected to find that the effects of a school library on the students' skills differ for categories of gender, parental education level, reading climate at home, and language spoken with parents. In general, boys, children from lower educated parents, less reader-friendly families, and families where less Dutch is spoken at home perform less well in reading and language (De Graaf, De Graaf, & Kraaykamp, 2000; Gijssberts & Iedema, 2012; Herweijer, 2009; Kloosterman, Notten, Tolsma, & Kraaykamp, 2011; Meelissen et al., 2012; Mullis et al., 2012; van Weerden & Hemker, 2012). We expected a larger positive change for these groups at the experimental school, given that these students have more to gain and school libraries have been suggested to help closing achievement gaps (Williams et al., 2013).

METHOD

DESIGN

To answer the research questions, a longitudinal study was conducted, following a quasi-experimental design. Participants were students of two Dutch primary schools: one school with an integrated library facility (i.e., the experimental school) and one school without such a school library (i.e., the control school). Random assignment of participants was not possible due to the "real life" nature of the design. Standardized tests and questionnaires (online and paper versions) were used to gather data over three successive school years (2011/2012, 2012/2013, and 2013/2014). The questionnaires were administered once a year and the tests once or twice a year.³

TABLE 1 NUMBER OF STUDENTS TESTED FOR THE FIRST, SECOND, AND THIRD YEAR, BY SCHOOL AND SCHOOL YEAR

	Experimental school			Control school		
	2011/2012	2012/2013	2013/2014	2011/2012	2012/2013	2013/2014
Tested for the:						
first year	25	26	10	40	13	15
second year	-	22	18	-	30	12
third year	-	-	12	-	-	19

In the first school year, data were collected from students attending grades 2 to 6. These children were also followed during the subsequent school years (excluding those who moved to secondary school or left school for other reasons), as well as children entering second grade and new students who entered (grades 2 to 6 of the) school. For instance, of the 25 experimental students who were administered at least one test in the first school year (2011/2012), 22 were tested again in the second year (2012/2013), and 12 of these students were tested for the third year (2013/2014) as well, whereas 10 experimental students were tested for the first time in 2013/2014 (see Table 1).

The experimental school had a library facility at its disposal, run and facilitated by the public library, with a large, varied, and well sorted collection of reading materials (see also Appendix A). The library provided different types of reading materials such as storybooks, comics, picture books, and non-fiction books, covering a wide variety of themes, with a total collection of approximately 5,400 materials, which is quite large for a Dutch school library. Books were available for all age groups and reading levels. The school library of the experimental school was managed by a reading and media coach (with credentials comparable to those of a teacher-librarian in the Anglo-Saxon world) employed by the public library.

Every three weeks during school hours, children attending the experimental school visited the library with their classmates and teacher to return and borrow books under the guidance of the coach. The reading materials were taken to the classrooms where they would be read during free reading time. The books were not taken home, a decision made by the school management. During the regular class library visits, the students would also, alternately, participate in a one-hour reading promotion lesson with the whole group or complete a digital so-called reading log individually, stating their opinion about the materials they had read. The lessons consisted of several recurring elements, including reading aloud to the children, creating a word web together and students working on processing assignments (i.e., students actively performed tasks related to the lessons' themes, such as drawing a picture, playing a word game, creating a poster, participating in a quiz, searching for information in books and online, and writing a short article). If we discuss the (effectiveness of the) school library, we basically refer to the whole school library program, including the library visits, the presence of a reading and media coach, the reading promotion lessons, and the reading logs.



As in many Dutch schools, books were also present at the control school and used for free reading in class. However, compared to the experimental school, the collection of the control school was smaller, far less varied and up-to-date, less well managed, and in the school's own possession, with teachers (and not a reading and media coach) being responsible for the book collection. The control school students did not visit the experimental school's library or the towns' public library with their class, nor did they participate in a school library program.

There were no major differences between the two schools with respect to language and reading education, except for the school library concept at the experimental school (see also Appendix C). Although Dutch elementary schools are free to shape their curricula, the central government sets quality standards and learning objectives that apply to all primary schools, including the experimental and control school involved in this study. The objectives provide a legal prescription for the skills and knowledge students are expected to have attained at the end of primary education (Nusche, Braun, Halász, & Santiago, 2014). During the school years 2011/2012 - 2013/2014, the experimental and control school mostly used the same (frequently used) methods for language and reading education. In working with the method for vocabulary and spelling, both schools used tablets in grades 2, 3, and 4 in 2013/2014 instead of paper based materials. Furthermore, both schools paid extra attention to low achieving students and high achieving ones. Moreover, at both schools time was spent on reading promotion activities, such as reading aloud to the children, introducing books in class, and reading for pleasure reading in class. When it comes to world orientation subjects (e.g., history and geography), teachers of the experimental school more often read a book aloud in class than control school teachers. The Inspectorate of Education monitors the schools' compliance with central rules and regulations, and the quality of education provided by the schools (Nusche et al., 2014).

PROCEDURE

During all school years, Cito-tests covering vocabulary, reading comprehension skills, and spelling skills were administered to the students, which was part of the student monitoring system used by the schools. These measurements usually took place once or twice a year at both the experimental and control school, often half way through the school year and/or at the end of the school year. The paper-and-pencil tests were completed in class after an instruction provided by the teacher, following the manual of the tests. For the purpose of the present study, the test scores were provided by the schools and, using a coding system that guaranteed anonymity, linked to the questionnaire data of the students and their parents. Parents were informed about the research project and they could notify the principal if they objected to their child's participation.

In all school years, a student questionnaire was administered to children attending grades 2 to 6 of the experimental or control school, consisting of a national survey on school libraries called the *Monitor the Library at School*,⁴ complemented by an additional questionnaire in the

last two school years (see also Appendix B). This happened in April 2012, and in November and December 2012 and 2013, respectively. The students were told in the introductory part of the questionnaire that the survey was not a test and they could ask the teacher for help if they would not understand a question. Most of the experimental school students completed an online version of the survey (95.3%). This happened in groups of up to eight students in a computer room under the guidance of the researcher and/or the reading and media coach and sometimes also a teacher. A few children attending the experimental school (4.7%) filled out a paper version of the survey in the classroom on request of their teacher. At the control school, all student questionnaires were administered in the classrooms under the guidance of the teacher, as this school did not have a separate computer room. On request of the teachers, a paper-and-pencil version of the survey was made widely available for the control school because of the limited number of computers in the classrooms and the limited amount of time available to the teachers to help individual students. In total, at the control school, 16.5% of the student questionnaires were completed online and 83.5% on paper. For this study, the items addressing the students' reading climate at home were taken from this questionnaire.

A parental questionnaire, designed for our research project, was handed out in April and May 2012 and in November and December 2012 and 2013. In the second and third school year, help was offered to parents who were having trouble with the Dutch language. During planned parent-teacher conferences afternoons and evenings at school, help was provided by a researcher and librarians, including someone who could translate the questionnaire for caretakers with a Moroccan background. For a smaller group of parents no translation could be provided. However, many parents who needed help could understand spoken language, but were not (fully) able to read and understand the written survey, and we had the impression that it was sufficient having someone explaining the questionnaire to them in Dutch. Some parents were also assisted by others, such as an older child, a brother or sister, or a neighbor. During the last school year, parents who had handed in the questionnaire received a €5,- gift card to be spent at a large retail and drugstore chain.

PARTICIPANTS

Students of the experimental and control school qualified for participation in the current study if they attended grade 2, 3, 4, 5 or 6 during at least one of the school years 2011/2012 - 2013/2014. Our analyses only included data from non-Western migrant students (following the definition adopted by Statistics Netherlands¹). Four children were excluded because of a lack of parental permission. One other student who first visited the experimental school and then the control school during the time span of the study was also excluded from the analyses. The final sample consisted of 129 participants across both schools (experimental school $n = 61$; control school $n = 68$), with one to six observations per student on one or more aspects of language and reading



ability. In total, 1064 student observations were available: 368 for vocabulary, 284 for reading comprehension, and 412 for spelling.

Most observations were from students with a Moroccan background (77.1%). Students from the other three major migrant groups in the Netherlands (Turkish, Surinamese, and Antillean) accounted for 13.6% of the observations, and other non-Western minority students made up the remaining 9.3% of the observations. Compared to the experimental school, the students of the control school less often had a Moroccan background and they were more often from the other non-Western groups. In keeping with national statistics (Statistics Netherlands, 2015), the vast majority of the observations (94.5%) were from students who were born in the Netherlands (i.e., second generation migrants). Western migrants were not included in the study, given the limited number of Western migrant students attending the schools involved in this study, and given that these students are not considered an at-risk group (e.g., in general, their school performance does not lag behind that of native Dutch primary school students; Onderwijs in Cijfers, 2015). Moreover, due to the limited number of native Dutch children attending the experimental school, it was not possible to compare the non-Western migrant students with native Dutch students in this study.

TABLE 2 SAMPLE BY SCHOOL AND LANGUAGE/READING ABILITY, IN NUMBER OF STUDENT OBSERVATIONS AND MEANS AND SDS

Characteristic	Vocabulary (<i>n</i> = 368)		Reading comprehension (<i>n</i> = 284)		Spelling (<i>n</i> = 412)		Total (<i>n</i> = 1064)	
	Exp. (<i>n</i> = 176)	Control (<i>n</i> = 192)	Exp. (<i>n</i> = 133)	Control (<i>n</i> = 151)	Exp. (<i>n</i> = 192)	Control (<i>n</i> = 220)	Exp. (<i>n</i> = 501)	Control (<i>n</i> = 563)
Age (<i>mean</i>)	9.69 (1.36)	9.35 (1.16)	9.90 (1.61)	9.35 (1.35)	9.87 (1.43)	9.64 (1.34)	9.81 (1.46)	9.46 (1.29)
Gender								
Boys (<i>n</i>)	85	94	67	75	92	107	244	276
Girls (<i>n</i>)	91	98	66	76	100	113	257	287
Parental educational level (<i>mean</i>)	1.61 (1.16)	2.27 (1.37)	1.64 (1.12)	2.27 (1.41)	1.58 (1.15)	2.25 (1.40)	1.61 (1.14)	2.26 (1.39)
Reading climate ^a (<i>mean</i>)	2.33 (.74)	2.38 (.69)	2.22 (.76)	2.36 (.68)	2.28 (.73)	2.37 (.67)	2.28 (.74)	2.37 (.68)
Language with parents ^b								
Dutch (<i>n</i>)	60	89	42	61	62	91	164	241
Dutch and other (<i>n</i>)	52	39	42	33	56	45	150	117
Other (<i>n</i>)	26	10	19	7	30	11	75	28

Note. Exp. = Experimental.

^aFor reading climate only data from the second and third school year were available for the experimental and control school (*n* = 324 and *n* = 378, respectively).

^bA value for language spoken with parents was not available for all observations of the experimental and control school (*n* = 389 and *n* = 386, respectively).

Table 2 presents the characteristics of the sample (i.e., observations) by school and aspect of language and reading ability. At the experimental school 501 observations were available from 61 students and at the control school 563 observations were available from 68 students. The total sample included children aged 7 to 13 years, with a mean age of 9.81 at the experimental school and 9.46 at the control school. At both schools, slightly more girls than boys participated in the study. In total, 520 observations were from boys (48.9%) and 544 from girls (51.1%). The parental educational level score ranged from 0 (*no education*) to 4 (*vocational colleges/university*). On average, parents of the experimental school students (1.61) scored lower than those of the control school (2.26), indicating a parental educational level of quite below and slightly above the lower tracks of secondary education, respectively. The mean scores of the experimental and control school students on reading climate at home (2.28 and 2.37, respectively) were not that favorable, considering that a score of 1 indicates the least reader-friendly climate at home and a score of 4 indicates the most reader-friendly climate. Furthermore, most observations were from students who only spoke Dutch with their parents (52.3%). About one third (34.5%) spoke both Dutch and another language, whereas 13.3% only spoke in a non-Dutch language with their parents. Although this order applies to both schools, at the control school, a higher percentage of the students spoke only in Dutch with their parents compared to the other school, whereas relatively more experimental school students used only a non-Dutch language or both Dutch and another language.

The schools' student observations differed significantly with regard to age, parental educational level, and language spoken with parents. Overall, the students of the experimental school were older than the control school students, $F(1, 1062) = 17.43, p < .001$, and the parents of the experimental school students had a lower educational level than those of the control school students, $F(1, 1062) = 69.17, p < .001$. In general, students attending the experimental school relatively often spoke in a non-Dutch language and in both Dutch and another language with their parents, whereas control school students relatively often spoke only in Dutch, $X^2(2, n = 775) = 40.15, p < .001$. The schools did not differ with regard to gender, $X^2(1, n = 1064) = .01, p = .917$, and reading climate, $F(1, 700) = 2.42, p = .120$. Similar results were found for all three aspects of reading and language ability separately, except that a significant age difference was not present for spelling.

MEASUREMENTS

Reading and language ability. The reading ability and Dutch language proficiency of the students were measured using tests from the pupil monitoring system devised by Cito, the National Institute for Educational Measurement. This system, which is used by many primary schools, consists of a comprehensive set of coherent paper-and-pencil (and computer-based) nationally standardized tests for longitudinal assessment of a student's achievement throughout primary



education (Herweijer, 2009; <http://www.cito.nl>; Moelands, 2010). The tests make it possible to determine the relative position of students among their peers (compared by grade/group), using data collected from various subpopulations in a national survey as a frame of reference. Based on percentiles, five ability levels (A to E) are distinguished. Level A refers to the 25% highest scoring students, whereas level E refers to the 10% lowest scoring students. Level B and C refer to the 25% students who score just above to substantially above average and just below to substantially below average, respectively. Level D includes the 15% students who score substantially below average (Feenstra, Kamphuis, Kleintjes, & Krom, 2010; Moelands, 2010; Visser, 2013). These levels can be further divided into an *ability level value* between 0 and 5 with one decimal, with a higher score indicating a higher score on the test (A = 4–5, B = 3–3.9, C = 2–2.9, D = 1–1.9, and E = 0–0.9). For instance, a student who achieves the highest in Level A has an ability level value of 5, and a student who scores high in level C has, for example, a level value of 2.8 (Cijvat & Bloemendaal, 2013; Driestar, n.d.). For our analyses, we used the students' ability level values (0.0–5.0) on the tests covering vocabulary, reading comprehension, and spelling. Note that these values are relative scores, meaning that the underlying scores differ by grade/group, with, in general, older students achieving higher underlying scores than younger students (Moelands, 2010). The Cito-tests assessing vocabulary, reading comprehension, and spelling have satisfactory reliability (Hollenberg, van der Lubbe, & Sanders, 2011; Toetswijzer 2015a, 2015b).

Vocabulary. The Vocabulary Cito-tests were administered to measure the size of the receptive vocabulary of the children. Cito defines vocabulary as a collection of labels possessed by language users for comprehending and using language (van Berkel et al., 2010). The paper-and-pencil tests consisted of multiple-choice items, in which students were offered words that they had to identify and recognize; they did not have to express themselves in words. The students were presented reading tasks and the test items addressed both the meaning of words (e.g., “What does chatting mean?”) and meaning relations (e.g., “What is the opposite of chaos?”). Children attending grade 2 had to complete 50 tasks, taking ca. 30 to 35 minutes, and the tests for students in grades 3 to 6 contained 70 questions, taking ca. 45 minutes (Cito, 2015; Hollenberg et al., 2011; van Berkel et al., 2010).

Reading comprehension. Reading comprehension is concerned with understanding the meaning of written words, sentences, and texts (Aarnoutse & van Leeuwe, 1998). The Cito Reading Comprehension tests were used to determine the reading comprehension level of the students. These multiple choice tests covered a broad range of text types (e.g., informative texts and fiction texts), genres (e.g., narrative, instruction, poem), and exercises (e.g., question about the text and missing parts in text). The paper-and-pencil tests consisted of three modules. All students were first administered the starting module and then they completed either an easier module (S1) or a more difficult module (S2), depending on their score on the starting module. The scores on S1 and S2 can be transposed on the same scale. The modules administered in the second, third and fourth

grade contained 25 questions, taking ca. 40 minutes to complete them. The modules meant for children in the fifth and sixth grade contained 30 tasks each, taking ca. 50 minutes (Feenstra et al., 2010; ToetsWijzer, 2015a).

Spelling. The Cito Spelling tests were used to determine the spelling level of the students. In spelling, the spoken language is converted into graphic symbols using orthographic rules (Aarnoutse & van Leeuwe, 2000; Ehri, 1991). The spelling rules were not explicitly tested, but instead, the students had to show indirectly to what extent they mastered the spelling rules by, for instance, writing down dictated words and trying to recognize an incorrectly spelled word in a group of four words. Every paper-and-pencil test consisted of three modules: a general starting module, an easier follow-up module (S1), and a more difficult follow-up module (S2). Which follow-up module the students got was determined by the students' score on the starting module. The scores on S1 and S2 can be transposed on the same scale. For grades 2 and 3, each module consisted of 25 tasks; the modules taken in the higher grades contained 30 exercises. Completing a module costed ca. 30 minutes (de Wijs, Kamphuis, Kleintjes, & Tomesen, 2010; ToetsWijzer, 2015b).

Background variables.

Age. The children's date of birth listed in the student administration of the schools was used to determine the age of the students at the time the tests were administered.

Gender. The student administration of the schools indicated whether a student is a boy or a girl.

Parental educational level. In the parental questionnaire, respondents were asked to report their own and their partner's highest completed education level, both in the Netherlands and (if applicable) in the country of origin, by choosing between 10 and 9 answer categories, respectively. These response options were derived from the Survey Integration Ethnic Minorities, a large-scale questionnaire used in the Netherlands addressing the integration of the four largest non-Western migrant groups, and from the Survey Integration New Groups that focuses on new migrant groups (Hilhorst, 2010). For the final parental education level variable, which ranged from a score of 0 to 4, the highest completed education level of either parent (or single parent) was assigned to the following five categories: (a) no education, (b) primary education, (c) lbo/mavo (i.e., junior vocational training/junior general secondary education), (d) havo/vwo/mbo (i.e., senior general secondary education/pre-university education/senior vocational training), and (e) hbo/wo (i.e., vocational colleges/university). This categorization was based on a classification adopted by Statistics Netherlands and used in previous research (e.g., Gijsberts & Iedema, 2012; Kortlever & Lemmens, 2012), with the exception of the category *no education* added in the current study to distinguish parents with no or little experience with formal education. If not indicated by respondents in the parental questionnaire, we used the information provided by the schools' student administration to determine the parents' educational level.



Reading climate at home. The students' reading climate at home was assessed through the student questionnaire. Reading climate at home was measured through a combination of three items included in the Monitor the Library at School and five items included in the additional questionnaire. In the monitor, the children were asked how often the following three situations happen: "My mother or father reads to me at home"; "My mother or father talks to me about books"; and "My mother or father accompanies me to visit the library". The response options offered in 2011/2012 and 2012/2013 differed somewhat from the ones offered in the last school year and were brought on the same 4-point scale (1 = *never*, 2 = *sometimes*, 3 = *regularly*, and 4 = *often*). The following five items of the additional survey were adapted from measurement instruments previously used in reading research (Kraaykamp, 2003; Leseman & de Jong, 1998; Notten, 2011; Stalpers, 2005; Stokmans, 2007; van Elsäcker-Bok, 2002; Verboord, 2005): "I see my mother or father reading at home"; "My mother or father knows in what book I'm reading"; "My mother or father gives me a book as a present"; "My mother or father tells me which books are fun"; and "When I was a toddler, my mother or father read to me at home". The four answer categories were similar to those used for the monitor items. The mean score of all these items constituted the final scale used in the analyses (with satisfactory reliability; Cronbach's $\alpha = .81$), ranging from 1 (*never*) to 4 (*often*). As the three items only measured with the monitor during three school years appeared not to build up to a reliable scale on their own, and given that the five items measured with the additional survey were only administered in the last two school years, the reading climate at home variable is only available for these school years.

Language spoken with parents. The parental questionnaire was used to assess the language(s) the child speaks with their parents (or caretakers). Respondents were asked to indicate whether their child usually speaks (a) Dutch, (b) both Dutch and another language, or (c) another language with the respondent and the respondent's partner.⁵ Our final variable consisted of three categories: (a) Dutch only; (b) both languages (i.e., both languages with both parents, or Dutch with one parent and another language with the other parent); and (c) non-Dutch language.

Time. A time variable was constructed, indicating how many months a child had been attending the (experimental or control) school at the time the measurements of their reading and language skills took place, counted from September 2011 (i.e., the opening of the school library), excluding the summer holidays (July and August). For the experimental school, this factor was used as a proxy for months of availability of the school library, whereas for the control school it was used for comparison, showing the number of months the students had been visiting the control school. The construction of the time variable was guided by the fact that the tests were administered at different time points and the fact that a substantial group of students entered the experimental school during the school year 2012/2013. To construct the time variable, we used the student administration of the schools, listing since when children were enrolled in school.

ANALYSES

Multilevel linear modeling was used to answer our research questions to take account of the hierarchical structure of the data, with the repeated measures of vocabulary, reading comprehension, and spelling (level 1) nested in the students (level 2). Multilevel modelling does not require independence of observations, nor complete data over occasions (Hox, 2002; Tabachnick & Fidell, 2007). To account for different intervals between the repeated measures, random intercepts and random slopes were considered for modeling the covariance structure (Snijders & Bosker, 1999).

Different models were tested to answer our research questions. Model 1 addressed the effect of the school library on vocabulary scores (question 1), reading comprehension skills (question 2), and spelling skills (question 3), while controlling for differences between the schools in parental educational level.⁶ In this model, an interaction effect between school and the time variable was fitted. This effect parameter indicates whether there was a difference in reading and language skills between the experimental school and control school students over time. A statistically significant interaction effect, with scores of experimental school students increasing more, means there was a positive effect of the school library. Models 2, 3, 4, 5, and 6 assessed whether the effects of the school library differed for categories of parental education level, gender, age,⁷ reading climate at home, and language spoken with parents, respectively (question 4). The effect of each factor was assessed in a sequential manner, whereby each effect was adjusted for all other effects added to the model in earlier steps. In each model, it was first examined whether there was a statistically significant main effect of the factor, indicating that this variable was a predictor of the dependent variable. Additionally, for each factor, a three-way interaction effect was fitted with school and the time variable, with a statistically significant interaction effect indicating that the size of the effect of the school library differed for values on this factor.

RESULTS

DESCRIPTIVES

Table 3 presents the overall means and standard deviations of the observations on the tests assessing the students' reading and language skills, broken down by school. The vocabulary scores

TABLE 3 MEANS AND SDS FOR VOCABULARY, READING COMPREHENSION, AND SPELLING, BY SCHOOL ($n = 1064$)

Skill	Experimental school			Control school			Total		
	<i>n</i>	<i>Mean</i>	<i>SD</i>	<i>n</i>	<i>Mean</i>	<i>SD</i>	<i>n</i>	<i>Mean</i>	<i>SD</i>
Vocabulary ^a	176	2.06	1.20	192	1.87	1.04	368	1.96	1.12
Reading comprehension	133	1.94	1.13	151	1.79	1.08	284	1.86	1.10
Spelling ^{**a}	192	2.64	1.31	220	2.28	1.15	412	2.45	1.24

^a After controlling for differences in parental educational level, the difference between the schools was statistically significant ($p < .01$).
^{**} $p < .01$.



ranged from .20 to 4.80, the reading comprehension scores from .40 to 4.90, and the spelling scores from .30 to 5.00, with a higher score indicating a higher proficiency. On average both the experimental and control school scored fairly low on the outcomes. Compared to the national reference group, the students scored substantially below average on the vocabulary and reading comprehension measurements, and just below to substantially below average on the spelling tests. The experimental school scored significantly higher on spelling than the control school, $F(1, 410) = 8.76, p = .003$. However, the mean results for the entire period of the study, as shown in this section, does not give us insight into the development over time. As we are interested in whether or not scores on measures of reading and language ability increase due to (more months of) school library usage, we have conducted multilevel analyses with repeated measures nested within students taking this time factor into account. The findings will be described in the next sections.

EFFECTS ON VOCABULARY

To test for an effect of the school library on *vocabulary*, a model was fitted with an interaction effect between school and the time variable (Model 1, Table 4), indicating whether there was a difference in the development of vocabulary scores between the experimental and control school students. The interaction effect was statistically significant $F(1, 81) = 7.20, p = .009$, with a higher increase in vocabulary scores over time at the experimental school than at the control school. Moreover, regardless of the school, the vocabulary of the students improved over time, as shown by the positive and statistically significant main effect of time, $F(1, 89) = 16.92, p < .001$.

In Models 2 to 6, main effects of parental educational level, gender, age, reading climate at home, and language spoken with parents were added as well as their interaction with time and school (Table 4). There were no statistically significant three-way interaction effects, suggesting that the effect of the school library did not depend on the factors included in the models.

Thus, with regard to our first research question we found a positive effect of the school library on vocabulary. With respect to our fourth research question, we did not find that the effect of the school library on vocabulary differed for categories of educational level, gender, age, reading climate at home, and language spoken with parents.

EFFECTS ON READING COMPREHENSION

The effect of the school library on *reading comprehension* was estimated similarly to vocabulary (Model 1, Table 5). The interaction effect between school and the time variable was not statistically significant, $F(1, 129) = 0.05, p = .816$, meaning that the school library did not have an effect on the students' level of reading comprehension. With respect to the background factors (Models 2 to 6), we found a statistically significant three-way interaction of school, time and parental education level, with a negative estimate for the experimental school and a positive estimate for the control school, $F(2, 126) = 5.78, p = .004$. This means that at the experimental school, children from lower

educated parents showed more improvement in their reading comprehension skills over time, whereas at the control school, students from lower educated families showed less improvement than children with higher educated parents. Furthermore, a statistically significant negative effect of age was found in Model 4, $F(1, 135) = 6.27, p = .013$, indicating that older children scored relatively lower on reading comprehension than younger children.

All in all, with respect to our second research question about the effectiveness of the school library on reading comprehension, our results revealed no effect of the library. With respect to

TABLE 4 MULTILEVEL REGRESSION OF VOCABULARY

Source	Model 1 (effect library)		Model 2 (effect education)		Model 3 (effect gender)		Model 4 (effect age)		Model 5 (effect reading climate)		Model 6 (effect language with parents)	
	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>
Intercept	0.31	.579	0.29	.589	0.33	.568	0.50	.482	1.11	.295	0.07	.796
Time	16.92***	.000	17.13***	.000	15.46***	.000	13.14***	.000	0.26	.609	6.64*	.012
School	2.08	.152	2.25	.136	2.08	.152	2.14	.147	4.97*	.029	1.26	.264
School×Time	7.20**	.009	7.12**	.009	7.15**	.009	3.15	.078	1.98	.161	5.31*	.025
Education	1.59	.209	2.23	.136	1.56	.213	1.41	.236	4.92*	.028	0.06	.813
School×Time× Education			1.31	.273								
Gender					0.09	.759						
School×Time× Gender					0.61	.545						
Age							0.10	.756				
School×Time× Age							0.97	.380				
Reading climate									3.40	.067		
School×Time× Reading climate									2.18	.115		
Language with parents											0.60	.553
School×Time ×Language with parents											0.59	.672
<i>n</i>	368		368		368		368		249		276	
Parameters	8		10		11		11		11		14	
-2LogL	796.38		811.92		810.88		816.15		648.87		631.27	

Note. Because of iterative estimation procedures, combined with a relatively small *n*, (little) variations in *p*-values are possible in the different models (1-4) for the variables held constant: time, school, School×Time, and education.

p* < .05. *p* < .01. ****p* < .001.



TABLE 5 MULTILEVEL REGRESSION OF READING COMPREHENSION

Source	Model 1 (effect library)		Model 2 (effect education)		Model 3 (effect gender)		Model 4 (effect age)		Model 5 (effect reading climate)		Model 6 (effect language with parents)	
	F	p	F	p	F	p	F	p	F	p	F	p
Intercept	0.18	.669	0.25	.622	0.17	.679	0.04	.837	0.29	.593	0.02	.877
Time	0.23	.630	0.26	.611	0.14	.711	2.43	.122	0.16	.692	0.49	.488
School	0.50	.482	0.83	.365	0.48	.490	0.82	.367	0.17	.686	0.06	.801
School×Time	0.05	.816	0.07	.785	0.02	.886	0.76	.384	3.62	.059	0.02	.888
Education	0.57	.452	2.04	.154	0.50	.481	0.73	.394	3.65	.058	0.31	.577
School×Time× Education			5.78**	.004								
Gender					0.91	.341						
School×Time× Gender					0.59	.556						
Age							6.27*	.013				
School×Time× Age							1.41	.247				
Reading climate									1.86	.175		
School×Time× Reading climate									0.40	.674		
Language with parents											0.34	.714
School×Time ×Language with parents											0.92	.457
n	284		284		284		284		189		204	
Parameters	8		10		11		11		11		14	
-2LogL	690.12		696.16		703.36		702.82		489.26		518.39	

Note. Because of iterative estimation procedures, combined with a relatively small n , (little) variations in p -values are possible in the different models (1-4) for the variables held constant: time, school, School×Time, and education.

* $p < .05$. ** $p < .01$.

the fourth question it was found that at the experimental school, children growing up in lower educated families over time improved their reading comprehension skills more than children from higher educated parents, whereas the opposite was true for the control school students. Age had a negative effect on the students' (relative) reading comprehension level.

EFFECTS ON SPELLING

The results of the multilevel models for *spelling* are presented in Table 6. As shown by the non-

TABLE 6 MULTILEVEL REGRESSION OF SPELLING

Source	Model 1 (effect library)		Model 2 (effect education)		Model 3 (effect gender)		Model 4 (effect age)		Model 5 (effect reading climate)		Model 6 (effect language with parents)	
	F	p	F	p	F	p	F	p	F	p	F	p
Intercept	0.13	.717	0.09	.760	0.15	.699	0.57	.454	2.74	.101	0.40	.527
Time	1.92	.170	2.03	.159	1.80	.185	8.84*	.003	0.14	.708	0.32	.575
School	4.01*	.048	4.40*	.038	3.96*	.049	5.34*	.023	3.61	.060	1.96	.166
School×Time	0.11	.744	0.12	.731	0.14	.709	1.30	.257	0.18	.670	0.00	.966
Education	0.00	1.00	0.03	.856	0.01	.946	0.10	.749	1.33	.250	0.10	.754
School×Time× Education			2.69	.073								
Gender					0.44	.509						
School×Time× Gender					1.16	.318						
Age							12.51**	.001				
School×Time× Age							1.00	.370				
Reading climate									3.51	.063		
School×Time× Reading climate									0.62	.541		
Language with parents											3.22*	.043
School×Time ×Language with parents											0.11	.979
n	412		412		412		412		264		295	
Parameters	9		11		12		12		12		15	
-2LogL	876.18		889.46		889.44		885.24		616.13		665.90	

Note. Because of iterative estimation procedures, combined with a relatively small n , (little) variations in p -values are possible in the different models (1-4) for the variables held constant: time, school, School×Time, and education.

* $p < .05$. ** $p < .01$. *** $p < .001$.

significant interaction effect between school and the time variable in Model 1, no effect of the school library was found, $F(1, 66) = 0.11$, $p = .744$. The main effect of school was statistically significant, $F(1, 122) = 4.01$, $p = .048$, with students of the experimental school performing higher on spelling than the control school students overall. In the five models with the background variables, no effects of three-way interactions were found, although statistically significant main effects were found for age (Model 4) and language spoken at home (Model 6). The results showed that older children achieved lower (relative) spelling scores than younger students, $F(1, 156) =$



12.51, $p < .001$. With regard to the main effect of language spoken at home, $F(2, 150) = 3.22$, $p = .043$, it was found that students speaking Dutch at home ($Mean = 2.58$, $SE = .17$) and students speaking Dutch and another language ($Mean = 2.56$, $SE = .15$) performed better on spelling than students only speaking in a non-Dutch language with their parents ($Mean = 1.72$, $SE = .35$).

Thus, with regard to our third research question we were not able to demonstrate an effect of the school library on spelling skills. With respect to our fourth research question, no three-way interactions were found, indicating that the effect of the school library on spelling did not differ for categories of educational level, gender, age, reading climate at home, and language spoken with parents. In general, age and language spoken at home had a main effect on spelling scores.

DISCUSSION

The present study aimed to investigate whether an integrated library facility in a Dutch primary school leads to better reading and language skills in students with a non-Western migrant background (grades 2 to 6). This study had a longitudinal quasi-experimental design, involving both an experimental school and a control school, using tests and questionnaires as measurement instruments. Firstly, we analyzed whether the school library had an effect on the *vocabulary* level of non-Western migrant students. Secondly, we examined whether the school library had an effect on the *reading comprehension* skills of these students. Thirdly, we tested whether the school library impacted their *spelling* skills. Fourthly, we explored whether the effects of a school library on the vocabulary, reading comprehension skills, and spelling ability of non-Western migrant students differed for categories of parental educational level, gender, age, reading climate at home, and language spoken with parents.

The results showed that the non-Western migrant students of the two schools differed in their vocabulary level over time, but not with regard to their reading comprehension ability and spelling skills. As expected, students attending the experimental school achieved higher vocabulary test scores over time than the control school. These findings indicate that the school library had a positive effect on the vocabulary of the students, but not on their reading comprehension skills and spelling ability. A possible explanation may follow from the fact that the students of the experimental school were not allowed to take home the school library books they borrowed during school hours. Possibly therefore, they did not show an increased reading frequency over time – as was found in our earlier study (Chapter 3) – while more reading is suggested to be important for improving language and reading skills (Broekhof, 2015; Krashen, 2004b; Krashen, Lee, & McQuillan, 2012; Mol & Bus, 2011a, 2011b). The positive effect of the school library on vocabulary may have to do with the reading promotion lessons that were part of the school library program, which incorporated elements that were positively related to vocabulary (more than to reading comprehension and spelling), such as reading aloud to the children and creating a word web together (Broekhof, 2011b; Vernooij, 2012). Moreover, teachers of the experimental school – who

had access to the large collection of the school library – more often read a book aloud than control school teachers when teaching world orientation subjects in class. Perhaps it may also be argued that free reading in class, which happened at both schools, was more strongly related with the students' vocabulary size than with their reading comprehension and spelling skills, given that only their vocabulary level increased over time regardless of the school – albeit the effect was significantly stronger at the experimental school where students spent slightly more time on free reading and selected books from a wider collection assisted by a reading and media coach. This calls for further research.

With regard to our fourth focus, we found that the effects of the school library on the students' vocabulary level and spelling skills did not differ for categories of parental educational level, gender, age, reading climate at home, and language spoken with parents. However, with regard to reading comprehension, the results showed that experimental school students growing up in lower educated families improved their reading comprehension skills more over time than children from higher educated parents, whereas control school students from lower educated families showed less improvement over time than children with higher educated parents. This suggests that a school library may have the ability to counter a so-called Matthew effect (Cunningham & Stanovich, 1998), where differences between disadvantaged and advantaged children increase over time.

In general, there was a main effect of age on the students' reading comprehension skills and spelling skills, and language spoken at home had an effect on spelling scores. The results showed that older children achieved lower reading comprehension scores and spelling scores (which were already normed by grade/group, and therefore roughly by age) than younger students, as compared to the national population of students in the Netherlands, on which the relative scores are based. Thus, as the students progressed through primary school, their performance in reading comprehension and spelling declined compared to the national reference group. Previous Dutch research on the development of the language disadvantages in migrant students during primary education indicated that their delay has diminished somewhat in the last year of primary school (Driessen & Merry, 2013; Guldmond & Bosker, 2006; Roeleveld, Driessen, Ledoux, Cuppen, & Meijer, 2011). This does not seem to be true for the two schools in our study given the negative effect of age, perhaps because of the large number of disadvantaged migrant students who started with a low level of language and reading skills at the schools (Guldmond & Bosker, 2006). With regard to the effect of language spoken at home, as expected (Herweijer, 2009; van Weerden & Hemker, 2012), students only speaking in a non-Dutch language with their parents performed worse on spelling than students speaking Dutch at home and students speaking Dutch and another language.

Although, given its focus on non-Western migrant students in particular, the present study contributes to the literature on the effectiveness of school libraries, there are several limitations



that should be noted. For example, the number of participants in the present study was limited and we controlled for differences between the schools as they were not completely similar regarding the students' background characteristics. This means that there may be effects of the school library (and background factors) for non-Western migrant children that could not be discerned in the current study. It should also be kept in mind that the implementation of the school library program in the experimental school could be improved. As previously mentioned, the library books borrowed during school hours were not allowed to be taken home – where the reading climate was not that favorable in most families – while providing reading materials that can be taken home is an important aspect of the national program the Library at School (Bron & Langendonk, 2015). In addition, as in many Dutch schools, reading materials were also present at the control school, although the school did not participate in a school library program and its collection was smaller, less up-to-date, and less varied. Perhaps more effects of the school library would be found if there had been a larger difference in the presence of books between the two schools. Moreover, we cannot rule out that differences in other factors, next to the school library, may have contributed to the (development and differences) in language and reading test scores, such as the reading and language lessons at the schools, although the differences between the schools were limited. Furthermore, the variables parental educational level and reading climate at home were measured through a parental survey and student questionnaire, respectively. We cannot be sure that every parent filled in the self-report with a complete understanding and that the students' answers completely covered their actual reading climate at home. For the students a bias may have occurred caused by factors such as social desirability and insufficient understanding. However, this applies to both schools, the reliability of the reading climate scale was satisfactory, and literature on survey research with children has suggested that generally from 7 years onward, children can complete a self-report (Borgers & Hox, 2002; Borgers, Hox, & Sikkel, 2004; de Leeuw, 2011).

Overall, the results of the present study among primary school students with a non-Western background showed a positive effect of the school library on vocabulary, and effects were found for parental educational level, language spoken with parents, and age. Students attending the school with the library facility attained higher vocabulary test scores over time than the control school students, suggesting that the school library can contribute to narrow the achievement gap between advantaged and disadvantaged students. In line with this, at the experimental school, students from lower educated families improved their reading comprehension skills more over time than students with higher educated parents. Students speaking Dutch or Dutch and another language with their parents achieved higher spelling scores than students only speaking in a non-Dutch language with their parents, and, compared to the national reference group, younger children performed better on reading comprehension and spelling than older students. No effects of the school library were found for reading comprehension and spelling skills. However, a more

optimal implementation of the school library program might well have led to stronger effects. In order to get a better understanding of the effectiveness of a school library for migrant students, future research should focus on the effects of an implemented school library program that meets all requirements. Future research involving a larger and more comparable sample is also needed to enhance power, and it would be interesting to include native students in the sample as well to compare the effects of a school library for non-Western migrant children and native Dutch children. Furthermore, research on the relationships between reading behavior, reading attitude, and reading and language skills of non-Western migrant students may also provide us with more insight into the potential role of school libraries in countering the ethnic inequality in school performance.

Notes

1. According to the Dutch National Institute for Educational Measurement, Cito, technical reading refers to the ability to accurately and rapidly decode words, and to recognize these words as carriers of meaning (Krom, Jongen, Verhelst, Kamphuis, & Kleintjes, 2010).
2. According to Statistics Netherlands a person is considered migrant, also referred to as *allochtonous*, if at least one parent was born outside the Netherlands. Thus, migrant groups also include persons who were born in the Netherlands themselves, called *second generation migrants*. A distinction can be made between migrants originating from Western countries (Europe [excluding Turkey], North America, Oceania, Indonesia, and Japan) and migrants coming from non-Western countries (Turkey, Africa, Latin America, and the rest of Asia; Alders, 2003).
3. The exact number of times the tests were administered varied per school, grade, school year, and test (vocabulary, reading comprehension, and spelling).
4. More information (in Dutch) about the monitor can be found at www.debibliotheekop.school.nl
5. Respondents were also asked to indicate whether their child usually speaks (a) Dutch, (b) both Dutch and another language, or (c) another language with siblings. As only a few children appeared to speak (also) in a non-Dutch language with their siblings, we have chosen to focus on the language spoken with the respondent and her/his partner (i.e., the parents/caretakers).
6. Although the schools also differed on age and language spoken with parents, we only controlled for parental educational level in our analyses. Given that the Cito-test scores were already normed by grade/group, and therefore roughly by age, it was not deemed necessary to control for the students' age. A value of language spoken with parents was missing for 27.2% of the student observations. By including the variable language spoken with parents in all models, a considerable amount of observations would be lost. Moreover, adding this variable as a control factor in all models would also result in less power due to adding extra parameters to each model. For these reasons, language spoken with parents was not controlled for. Note that language spoken with parents was significantly related to the control variable parental educational level, $F(2, 772) = 104.56, p < .001$: Parents who spoke only in Dutch with their child were the highest educated, whereas parents who only spoke in a non-Dutch language had the lowest educational level; parents speaking both Dutch and another language with their child scored in between. Note that if we would also control for language spoken with parents in all models (resulting in a smaller group of respondents), on top of controlling for parental educational level, the answers to our research questions would remain unchanged, although a few (other) effects slightly differed. For vocabulary, in Model 5, the main effect of parental educational level was not statistically significant. With respect to spelling, no statistically significant main effect of school was found, nor was the main effect of time in Model 4 significant. For reading comprehension, all models produced similar results.
7. Because of the way the study was designed, with an influx of new subjects and outflow after the final grade during the years the study was in the field, there is no artificial (almost) perfect relationship between time and age. For all students, the time variable indicates the number of months between the date of a measurement occasion (date of test) and September 2011 (or a later date in case a student entered one of the schools after September 2011), regardless of age. This means, for example, that during the second school year at the end of January 2013, both children aged 8 years and children aged 12 years had been attending the experimental school or control school for 15 months.

CHAPTER 5

RELATIONSHIPS BETWEEN THE READING ATTITUDE,
READING BEHAVIOR, AND READING AND LANGUAGE
SKILLS IN NON-WESTERN MIGRANT STUDENTS





ABSTRACT

As part of a Dutch research project on the effectiveness of a school library for ethnic minorities, this study addressed the relationship between the reading attitude, reading behavior, and reading and language skills in non-Western migrant students (grades 2 to 6). We found the children's attitude toward reading to be positively related to their reading behavior: Children who liked to read and/or considered reading important tended to read more frequently in their leisure time and to spend more time reading. The relationships between the students' reading attitude and behavior on the one hand with their vocabulary size, reading comprehension level, and spelling level on the other, however, were far less evident. It is probable that school libraries may enhance the students' reading attitude, reading behavior, and language and reading skills and the relationships between these factors by providing wide access to and helping to select appropriate reading materials that can also be taken home, as well as by providing stimulating reading activities, and supporting parents and schools.

A slightly modified version of this chapter has been submitted for publication as:

Kleijnen, E., Huysmans, F., Ligtvoet, R., & Elbers, E. Relationships between the reading attitude, reading behavior, and reading and language skills in non-Western migrant students.

Good language and reading skills are important for one's educational success and post-school opportunities (McGeown, Lynne, Griffiths, & Stothard, 2014; National Endowment for the Arts [NEA], 2007) as well as for a country's economic growth (Coulombe, Tremblay, & Marchand, 2004; Organisation for Economic Co-operation and Development, 2010). These skills have been positively associated with reading for fun (Broekhof, 2011a; Krashen, 2004b), an activity which can also contribute to gaining knowledge about the world and the development of social skills (Heideman, 2015). Although non-Western migrant children¹ in the Netherlands do not read less than their native peers (Meelissen et al., 2012; Netten, 2014), nor do they have a less positive attitude toward reading (Netten, 2014; Stokmans & Broeder, 2009; van Elsäcker-Bok, 2002), there is a clear ethnic inequality in school performance, as is often the case in Western countries with non-Western migrant groups (Gijsberts & Iedema, 2012; Schnepf, 2007). In 2015, 17% of the primary school aged children (4-12 years) had a non-Western background (Statistics Netherlands, 2015). The situation of many non-Western migrant students, such as growing up in families with a relatively weak socio-economic position, places them at a higher risk for poor school performance (Gijsberts & Herweijer, 2009; Kleijnen, Huysmans, & Elbers, 2015a). Studies have demonstrated that the educational achievement of non-Western migrant children – including those born in the Netherlands – lags behind that of native Dutch students, in particular with regard to language ability and reading proficiency (Gijsberts & Iedema, 2012; Netten, 2014). Their disadvantages are already manifest at the start of primary school and continue throughout primary education and beyond (Gijsberts & Iedema, 2012; Herweijer, 2009).

Reading promotion efforts are seen as a way to reduce learning disadvantages. In the Netherlands, educational institutions often work closely with public libraries when it comes to reading promotion, and school libraries supported or run by public libraries have become increasingly common as part of the national *the Library at School* program (Bron & Langendonk, 2015; Kasperkovitz, van Tits, & von der Fuhr, 2009). This program, started in 2009, seeks to promote reading in students by setting up high quality libraries in schools and improving the collaboration between schools and public libraries (Broekhof, 2015; Bron & Langendonk, 2015). In 2014, 74% of all library organizations participated in the library program, involving over one third (36%) of all primary schools (Bron & Langendonk, 2015; van Dam & Heideman, 2015). Reading promotion, as provided by the school libraries, is typically aimed at increasing children's reading frequency, improving their attitude toward reading, and, ultimately, improving their reading and language skills (van Dam & Heideman, 2015; Huysmans, Kleijnen, Broekhof, & van Dalen, 2013; Stalpers, 2005).

In earlier studies, we already addressed the effect of an integrated library facility in a Dutch primary school on the reading attitude, reading behavior, and language and reading skills of students with a non-Western background (see Chapters 3 and 4). We showed that students attending a school with a school library considered reading more useful and attained higher



vocabulary test scores over time than students attending a control school without such a library facility. It was also demonstrated that several background characteristics (i.e., gender, age, parental educational level, and reading climate at home) played a role in the students' reading attitude, reading behavior, and/or language and reading skills. No significant effects of the library, however, were found with respect to their reading behavior and the degree in which they think reading is fun, nor with regard to their reading comprehension level and spelling skills. A more optimal implementation of the school library program, with books allowed to be taken home, might well have led to stronger effects on the students' reading attitude, reading behavior, and language and reading proficiency. In order to get a better understanding of potential effects of a school library, the current study focuses on the triangular relationship between these three factors for non-Western migrant children. In the next sections, relevant results from the literature will be discussed.

READING BEHAVIOR AND READING ATTITUDE

A considerable bulk of research has shown that *reading behavior* is positively related to students' *attitude toward reading* (e.g., Broeder, Stokmans, & van Wijk, 2011; Broeder & Stokmans, 2013; Melnick, Henk, & Marinak, 2009; Stalpers, 2005, 2007; Stokmans, 2006; Stokmans & Broeder, 2009). This attitude has been conceptualized as a tendency to respond positively or negatively toward a certain object, in this case reading (Broeder et al., 2011; Eagly & Chaiken, 1993; Fishbein & Ajzen, 1975; Miesen, 2003). Literature indicates that an individual's reading attitude is based on his or her previous reading experiences, which can be affective (e.g., feeling relaxed or excited, and being absorbed by a story) and/or rational (e.g., expanding one's vocabulary and acquiring knowledge) in nature (Stalpers, 2005). Positive reading experiences are thought to contribute to a positive attitude toward reading, whereas negative experiences are thought to lead to a (more) negative reading attitude (Stalpers, 2005).

Conversely, research has shown that reading attitude is an important factor in explaining variation in reading behavior (Broeder & Stokmans, 2013; Huysmans, 2013; Melnick et al., 2009; Stalpers, 2005; Stokmans, 1999; van Schooten & de Glopper, 2002). Here, a distinction is often made between two dimensions of attitude: a hedonic and a utilitarian dimension (Ahtola, 1983; Olson & Maio, 2002; Stalpers, 2005; Stokmans, 2007). The hedonic component refers to the question whether reading is seen as enjoyable, whereas the utilitarian dimension concerns the degree in which reading is considered useful (Stalpers, 2005; Stokmans, 1999, 2007). Ajzen (1991, as cited by Broeder & Stokmans, 2013, p. 91) suggested that "the more positive the reading attitude components, the higher the expected value of reading, the stronger the probability that an individual will read at a particular point in time, and the higher the reading frequency".

Several studies have demonstrated that the hedonic aspect is a stronger predictor of reading behavior than is the utilitarian dimension (Broeder et al., 2011; Broeder & Stokmans, 2013;

Stalpers, 2005; Stokmans, 1999, 2006; Stokmans & Broeder, 2009). According to the findings of Broeder et al. (2011), this applies to both native Dutch and migrant youth (13-24 years), for whom they found positive and comparable relations. In line with this, Baker and Wigfield (1999), who examined correlations between reading activity and reading motivation – including reading enjoyment and the importance of reading – among fifth and sixth graders of six schools in the United States, found similar results for African American and White students, with both groups showing a stronger correlation between reading behavior and reading enjoyment than between reading behavior and the importance of reading. Van Elsäcker-Bok (2002) followed native Dutch and minority students from third to fourth grade and examined the relationships between leisure reading with intrinsic and extrinsic motivation, constructs that are closely related to the pleasure of reading and the utility of reading, respectively. Although she also showed that students with a higher intrinsic motivation reported more leisure reading, regardless of ethnic background, she found that the extrinsic reading motivation of students with a Moroccan or Turkish background negatively affected their leisure time reading, whereas no such effect was found for native Dutch students.

READING ATTITUDE AND READING AND LANGUAGE SKILLS

Research has shown that a positive *attitude toward reading* is also associated with a higher *reading and language proficiency* (e.g., Gille, Loijens, Noijons, & Zwitter, 2010; Heesters, van Berkel, van der Schoot, & Hemker, 2007; Kuhlemeier et al., 2014; Mullis, Martin, Foy, & Drucker, 2012; Petscher, 2010; Sainsbury & Clarkson, 2008; Swalander & Taube, 2007; van Schooten & de Glopper, 2002). This is especially true for the hedonic component of reading attitude (Heesters et al., 2007). Mullis et al. (2012) have indicated that the relationship between reading achievement and reading attitude is bidirectional. On the one hand, reading ability contributes to the extent to which reading is considered an enjoyable or a frustrating activity (Stokmans, 2006). If an individual has sufficient reading skills, leaving enough "energy" (processing capacity) for imaging the story, this increases the probability that reading is considered as a pleasurable activity (Stokmans, 2006). Low-ability readers, on the other hand, are more likely to have more negative reading experiences which may lead to a belief that reading is too hard and cannot lead to reading pleasure, with a less positive reading attitude as a result (McKenna, 1994, as cited in Stalpers, 2005, p. 44). Thus, if students experience reading as difficult, their reading attitude will be negatively adjusted (Broeder & Stokmans, 2013). On the other hand, studies have also indicated that reading attitude is a predictor of students' reading proficiency (Gille et al., 2010; Martinez, Aricak, & Jewell, 2008; Petscher, 2010; Swalander & Taube, 2007). In line with this, a Dutch study by Mol and Jolles (2014) involving a sample of secondary school students has shown that non-leisure readers with a positive reading attitude – enjoying reading – attained higher school grades in Dutch, mathematics, and English than non-leisure readers who did not enjoy reading (i.e., students in



the higher [pre-academic] educational track as well as girls in the lower [pre-vocational] track). This finding underlines the importance of reading attitude for school performance, regardless of reading behavior, although the researchers note that (since no positive effect was found for boys in the lower track) students may need a minimum level of reading proficiency before their general reading enjoyment will affect their school achievement.

Research has indicated that one's reading attitude is more strongly related with reading behavior than with reading proficiency (Baker & Wigfield, 1999). According to Aarnoutse and Boland (1987) and Aarnoutse and van Leeuwe (1998), a particularly negative or positive attitude does not necessarily imply low or high achievement in reading and language. Similarly, van Elsäcker-Bok (2002) found no significant relationship between intrinsic motivation and reading comprehension for ethnic minority students in particular; their low achievement scores were not caused by a low motivation level. For the native Dutch students, in contrast, she found that intrinsic motivation was positively related to their reading comprehension level, while their extrinsic motivation was negatively related to their reading comprehension scores. Netten (2014), on the other hand, who followed fourth grade students in the Netherlands, found that reading motivation – consisting of reading enjoyment and a behavioral component – did have an effect on the reading literacy achievement of both native Dutch and migrant students. Baker and Wigfield (1999) also found a significant positive relationship between reading enjoyment and reading scores for both African American and White students, but no relationship between the importance attached to reading and reading skills for both groups.

READING BEHAVIOR AND READING AND LANGUAGE SKILLS

There is a vast amount of research demonstrating a positive relationship between *reading behavior* and *reading proficiency and language ability* (see Broekhof, 2011a; Krashen, 2004b), although some studies have found no such effect (Aarnoutse & van Leeuwe, 1998; Carver & Leibert, 1995; Otter, 1993; Taylor, Frye, & Maruyama, 1990). On the basis of the most accurate national (American) data available, the NEA (2007) indicated that reading for pleasure strongly correlates with reading achievement: Youth who reported reading for fun on a weekly or daily basis attained higher reading scores than less frequent readers. Similar outcomes were observed in the 2006 Progress in International Reading Literacy Study (PIRLS), a large-scale international comparative study among fourth-graders, including students from the Netherlands. Students who reported reading for fun (almost) every day had a higher average reading score than students reading for pleasure once or twice a week. Those reading only twice a month or less achieved the lowest reading scores on average (Mullis et al., 2007). With regard to type of reading material, studies have suggested that fiction books in particular show the strongest relation with children's linguistic skills (Gille et al., 2010; Hakemulder, 2011; McGeown et al., 2014; Mullis et al., 2007; OECD, 2011a). Researchers who have reviewed studies on reading for fun have also shown a positive association between reading behavior

and language and reading skills. On the basis of evidence from studies carried out worldwide, Krashen (2004b) concluded that *free voluntary reading* (i.e., reading – both in- and out-of-school – because you want to) positively affects the development of vocabulary, reading comprehension, grammar, and spelling. These findings are supported by Mol and Bus (2011b) who meta-analyzed 99 studies addressing leisure reading in preschoolers and kindergartners, first to twelfth graders, and college and university students. They found that print exposure, as measured by checklists, correlated with scores on reading and language tests, with children reading books in their leisure time having larger vocabularies, better spelling and technical reading skills, and a better reading comprehension ability than peers with less reading experience.

Although a bulk of research has established a positive link between reading behavior and reading and language skills, the causality of this relation is not undisputed. It seems plausible that reading contributes to one's reading ability, but some studies have presented a model in which an influence of reading achievement on reading frequency provided a better fit than the model with the reverse effect (Aarnoutse & van Leeuwe, 1998; Otter, Schoonen, & de Gloppe, 1997; Roe, Eggermont, & Minnebo, 2001). Most probably, though, leisure reading and reading achievement are reciprocally related (Kortlever & Lemmens, 2012). The findings of the meta-analysis by Mol and Bus (2011b) suggest an upward spiral of causality: Children with better reading and language skills are more inclined to read, and more print exposure will in turn translates to a higher reading comprehension level, a larger vocabulary size, and better spelling and technical reading skills. Inversely, a downward spiral is also possible in which poor readers are less inclined to read, and are therefore unlikely to enhance their reading and language ability to the same extent as their reading counterparts. This widens the reading gap between low- and high-ability readers, also referred to as the Matthew effect in academic achievement: a-rich-get-richer and poor-get-poorer phenomenon (Cunningham & Stanovich, 1998; Mol & Bus, 2011b).

Not much is known about the relationship between reading behavior and school performance for migrant students in particular. Research has suggested that the positive connection between reading behavior and various components of reading and language skills also applies to low-ability readers and/or second-language learners (Broekhof, 2011a; Cunningham & Stanovich, 1998; Kortlever & Lemmens, 2012; Krashen, 2004b; Mol & Bus, 2011b). However, research has also suggested that such positive relationships were not always as strong as for more able readers (Mol & Bus, 2011a, 2011b) or were not found at all for primary school students with a migrant background (van Elsäcker-Bok, 2002).

PRESENT STUDY

Given the positive relations often demonstrated between reading behavior, reading attitude, and language and reading proficiency, it is striking that the language and reading skills of non-Western migrant children in the Netherlands lag behind, whereas these children do not have a less

positive attitude toward reading than native Dutch students, nor do they read less. This suggests that positive relationships between these factors may not be present for migrant children. So far, few studies have addressed these relationships among migrant students – and primary school students in the Netherlands in particular – and previous research is not conclusive with respect to these relationships. With the present study, we aimed to gain more insight into the relationships between the reading attitude, reading behavior, and reading and language skills (i.e., vocabulary, reading comprehension, and spelling skills²) in students (grades 2 to 6) with a non-Western background. The following research questions were addressed:

1. Is there a relationship between the reading attitude, reading behavior, and language and reading skills in students with a non-Western background?
2. If existent, do these relationships hold after controlling for background characteristics (i.e., gender, age, parental educational level, and reading climate at home)?

Based on the literature discussed earlier, we expected to find a positive relationship between the students' reading attitude and reading behavior, with students who think reading is fun reporting more reading. Given the inconsistency in the literature and considering the language disadvantages of migrant students, we expected to find less evident relationships between the students' vocabulary size, reading comprehension level, and spelling skills with their attitude toward reading and their reading behavior. Several background factors known to be related to reading attitude, reading behavior and/or reading and language skills, such as gender and reading climate at home, are taken into account in examining the relationships (e.g., Kleijnen, Huysmans, Ligtoet, & Elbers, 2015b; Gijssberts & Iedema, 2012; Huysmans, 2013; Kraaykamp, 2002; Meelissen et al., 2012; Notten, 2011).

METHOD

DESIGN AND PROCEDURE

For our research project, we conducted a longitudinal study involving students (grades 2 to 6) of two Dutch primary schools.³ Questionnaires (online and paper versions) and standardized tests were used to gather data over three successive school years (2011/2012, 2012/2013, and 2013/2014). Once a year, a student survey was completed by the children, consisting of the *Monitor the Library at School*⁴ – a national survey on school libraries (which we will also refer to as “MQ”), complemented in the last two school years by an additional questionnaire (also referred to as “AQ”). As part of the student monitoring system used by the schools, tests assessing vocabulary size, reading comprehension skills, and spelling skills were administered to the students once or twice a year. The test scores were provided by the schools and connected to the questionnaire data, using a coding system that guaranteed anonymity. Around the same time the student surveys were administered, a questionnaire was handed out to parents as well, asking them about (background) characteristics of the family. More detailed information about the design, procedure, involved schools, and measurements is provided in the appendices A, B, and C.

TABLE 1 SAMPLE CHARACTERISTICS ($n = 143$)

Characteristic	<i>n</i>	<i>Mean</i>	<i>SD</i>
Age	143	10.17	1.61
Gender			
Boys	70	-	-
Girls	73	-	-
Parental educational level (0 – 4)	143	1.78	1.30
Reading climate at home ^a (1 – 4)	112	2.29	.68

^aNote that for reading climate only data from the second and third school year were available for the students (78.3%).

PARTICIPANTS

Participants in this study were students with a non-Western background (following the definition adopted by Statistics Netherlands¹) who were in second, third, fourth, fifth or sixth grade of the schools involved during at least one of the following school years: 2011/2012, 2012/2013, and 2013/2014. The final sample consisted of 143 students, with one to three observations for reading attitude and reading behavior, and up to six observations on one or more aspects of language and reading proficiency.

Table 1 presents the characteristics of the sample. The children's age ranged from 7 to 13 years, with a mean age of approximately 10 years. About an equal number of boys (49%) and girls (51%) participated in the study. Their parents' educational level ranged from no education (score 0) to higher vocational education/university (score 4). Two thirds of the students' parents, mostly born and raised in a non-Western country, had completed a lower track of secondary education or had received less or no formal education. There was a difference in parental educational level between the two schools participating in the study, $F(1, 141) = 10.05, p = .002$. The students' reading climate at home ($Mean = 2.29$) was not that favorable, considering that a score of 1 indicates the least reader-friendly climate and a score of 4 the most reader-friendly climate. So far as we could assess, most students usually spoke Dutch with their parents (47.1%). About 13% of the students spoke in a non-Dutch language with their parents, and the other students (40%) spoke both Dutch and another language with their parents.⁵ The vast majority of the students (90.2%) were born in the Netherlands (i.e., second generation migrants). Most students had a Moroccan background (73.4%); children from the other three major migrant groups in the Netherlands (Turkish, Surinamese, and Antillean) made up 13.3% of the sample, and other non-Western minority students accounted for the remaining 11.2% of the sample.

MEASUREMENTS

Reading attitude and behavior.

Reading attitude. Students were asked in the MQ to respond to the following question: “How do you feel about reading a book?” on a 4-point scale: ‘annoying’; ‘do not like it so much’; ‘quite



like it; and 'like it very much'. In the AQ, a *hedonic and utilitarian component* (i.e., enjoyable and useful, respectively) of reading attitude were assessed. The students were asked what they think of reading a book in their leisure time, followed by ten items each consisting of four answer categories (semantic differentials). Five items referred to the hedonic aspect of reading attitude (e.g., 'very boring'; 'pretty boring'; 'pretty exciting'; 'very exciting') and the other five items addressed the utilitarian aspect (e.g., 'very important'; 'pretty important'; 'not that important'; 'not important at all'). For the analyses, it was made sure that a higher (mean) score represented a more positive attitude, with satisfactory reliability for the hedonic scale (Cronbach's $\alpha = .82$) and the utilitarian scale (Cronbach's $\alpha = .75$).

Reading frequency. In the MQ, the students were asked how often they read a book for pleasure at home, offering them the following five answer categories: 'never'; 'a couple of times a year'; 'a couple of times a month'; 'a couple of times a week'; and 'every day'. In the AQ, the students were asked to report on the same 5-point scale how often they read the following reading materials in their spare time: (a) storybooks (fiction), (b) non-fiction (informative) books, (c) picture books, (d) magazines, (e) comic books, and (f) poems and verses. Although the mean score of the six items could be used as a scale in the analyses (reliability just satisfactory; Cronbach's $\alpha = .71$), we have chosen to report the results for the items separately as conclusions may differ for different reading materials.

Reading duration. In the AQ, the students were asked how much time they spent reading a book per day during their leisure time. They were offered the following five answer categories: 'I don't read'; '15 minutes'; 'half an hour'; '45 minutes'; 'one hour or longer'. Pictures of clocks indicating the time were presented to illustrate the response options.

Reading and language ability. The reading and language skills of the students were assessed through tests from the pupil monitoring system devised by the Dutch organization Cito, the National Institute for Educational Measurement. This system, used by many primary schools, consists of a comprehensive set of nationally standardized tests for assessment of student achievement throughout primary school (Herweijer, 2009; <http://www.cito.nl>; Moelands, 2010). The relative position of students among their peers (compared by grade/group) can be determined by the tests. Five ability levels (A to E) are distinguished: A = 25% highest scoring students, B = 25% students who score just above to substantially above average, C = 25% student who score just below to substantially below average, D = 15% students who score substantially below average, and E = 10% lowest scoring students (Feenstra, Kamphuis, Kleintjes, & Krom, 2010; Moelands, 2010; Visser, 2013). The five levels can be further divided into an *ability level value* between 0 and 5 with one decimal, with a higher value indicating a better test score (E = 0–0.9, D = 1–1.9, C = 2–2.9, B = 3–3.9, and A = 4–5; Cijvat & Bloemendaal, 2013; Driestar, n.d.). These ability level values (0.0–5.0) were used in our analyses.

Vocabulary. The Cito Vocabulary test was used to measure the students' receptive vocabulary size (Cito, 2015; van Berkel et al., 2010).

Reading comprehension. To determine the children's reading comprehension level of the students, the Cito Reading Comprehension test was administered (Feenstra et al., 2010; ToetsWijzer, 2015a).

Spelling. The Cito Spelling test was used to assess the spelling level of the students (de Wijs, Kamphuis, Kleintjes, & Tomesen, 2010; ToetsWijzer, 2015b).

Background characteristics.

Age. To determine the age of the students, we used their date of birth listed in the schools' student administration.

Gender. The student administration indicated whether a child is a girl or a boy.

Parental educational level. Parents/caretakers were asked to report their own and their partner's highest completed education level, if applicable both in the Netherlands and in their country of origin, by choosing between 10 and 9 options, respectively (Hilhorst, 2010). If not indicated by respondents in the parental questionnaire, the schools' student administration was used to determine the parents' educational level. The final parental education level variable indicated the highest completed education level of either parent (or single parent): (a) no education, (b) primary education, (c) lbo/mavo (i.e., junior vocational training/junior general secondary education), (d) havo/vwo/mbo (i.e., senior general secondary education/pre-university education/senior vocational training), and (e) hbo/wo (i.e., higher vocational colleges/university).

Reading climate at home. Three items included in the MQ and five items included in the AQ were used to assess the students' reading climate at home. The children were asked how often several situations happen, such as "My mother or father reads to me at home"; "My mother or father talks to me about books"; "I see my mother or father reading at home"; and "My mother or father knows in what book I'm reading", using a 4-point scale (1 = *never*, 2 = *sometimes*, 3 = *regularly*, and 4 = *often*). The mean score of the eight items constituted the final score used in our analyses (with satisfactory reliability; Cronbach's $\alpha = .81$). As the additional survey was not completed in the first school year, the reading climate at home variable is only available for the last two school years.

Time. A time variable was constructed, indicating how many months students had been attending the school at the time the measurements took place, counted from September 2011 (i.e., the opening of the school library), excluding the summer holiday months (July and August). The schools' administration with the students' date of enrollment was used to construct the time variable.

ANALYSES

To examine the relationships between reading attitude, reading behavior, vocabulary, reading comprehension, and spelling skills, a three-step analysis was conducted. First, with regard to our first research question, we looked at correlations in order to explore the relationship between the dependent variables. Given that the students had up to three observations for reading attitude and



reading behavior, and up to six observations for their reading and language skills, we included the computed mean scores for each student in the analyses. In this step, we also compared the reading attitude and behavior of two groups of students: students whose mean test scores were above average as determined nationally (≥ 3.0) and students with lower test scores.

In a second step, we focused on our second research question, examining whether the relationships between the students' reading attitude, reading behavior, and reading and language skills (if existent) held after controlling for several background characteristics. Therefore, multiple regression analyses were conducted, assessing the ability of an outcome variable (i.e., a measure of reading attitude, reading behavior, or reading and language proficiency) to predict another dependent variable, after controlling for the influence of background factors, using a stepwise method. In step 1, the variables gender, age, and parental education level were entered, in step 2, reading climate at home was entered, and in the final step we entered an outcome variable of interest. Again, the students' mean scores on the variables were used in the analyses. It is important to note that data (of the first school year) was lost due to adding the variable reading climate, as this factor was only available for the second and third school year. Although the regression analyses provide insight into the contributions of our (in)dependent variables to variation in an outcome variable, they do not take into account the hierarchical structure underlying our data.

In a final step, in order to further examine our research questions, multilevel analyses were performed to account for the hierarchical structure of the data, with the repeated measures of reading attitude, reading behavior, vocabulary, reading comprehension, and spelling (level 1) nested in the students (level 2). The questionnaire data were linked to scores of tests that were administered no more than two to three months apart (i.e., the students' scores on tests completed at the end of the second and third school year were excluded from the analyses). With regard to the first research question, we examined the main effects of the students' reading attitude on their reading behavior (and vice versa), as well as main effects of the students reading attitude and behavior on their reading and language skills (and vice versa), after taking into account the design of the study (i.e., after adding the effects of parental educational level, school, time, School x Time to the model): a longitudinal study involving two schools (that differ on parental educational level). To further address the second research question, the multilevel analyses were repeated, this time also controlling for background factors on top of controlling for the design.

RESULTS

DESCRIPTIVES

Table 2 presents the means and standard deviations on reading attitude, reading behavior, and reading and language skills on the student-level, with a higher score indicating better skills, a more positive reading attitude, and more frequent reading. For example, for reading frequency, as measured with the MQ, 261 observations were available from 140 students, and the students

TABLE 2 MEANS AND SDS ON READING ATTITUDE, READING BEHAVIOR, AND READING AND LANGUAGE SKILLS FOR STUDENTS

	Students (<i>n</i>)	Mean	SD	Observations (<i>n</i>)
Monitor (MQ)				
Reading attitude	140	3.20	.67	261
Reading frequency	140	4.01	.98	261
Additional questionnaire (AQ)				
Reading attitude				
Hedonic	115	3.07	.57	179
Utilitarian	115	3.27	.51	179
Reading frequency				
Storybooks	117	3.81	1.01	183
Non-fiction books	117	2.99	1.19	183
Picture books	117	2.48	1.42	183
Magazines	117	3.03	1.35	183
Comic books	117	3.49	1.20	183
Poems and verses	117	2.45	1.38	182
Reading duration	117	2.95	1.08	181
Tests				
Vocabulary	105	1.84	.99	368
Reading comprehension	121	1.79	1.01	284
Spelling	126	2.37	1.15	412

reported reading for pleasure about a couple of times a week on average. On average, the students had a quite positive reading attitude – considering reading somewhat more useful than enjoyable – and read fairly often. In comparison with the national reference group of the Cito-tests, the students' mean scores on the vocabulary and reading comprehension measurements were substantially below average, and their spelling scores were just below to substantially below average.

Correlations of the students' average scores across the school years (not in Table) show that the different measures of reading attitude were positively related to one another, with, for instance, a strong correlation between the hedonic and utilitarian dimension, $r = .77$, $n = 115$, $p < .001$. This also holds true for the different measures of reading behavior, with students reading more frequently according to the MQ also being more likely to read more minutes a day, $r = .40$, $n = 117$, $p < .001$. Of the six types of reading materials, reading storybooks clearly showed the strongest relationship with reading frequency (MQ; $r = .73$, $n = 117$, $p < .001$) and reading duration (AQ; $r = .43$, $n = 117$, $p < .001$). The relationships between the different aspects of reading and language ability were also significant, with high scores on spelling being associated with higher scores on both vocabulary ($r = .51$, $n = 104$, $p < .001$) and reading comprehension ($r = .61$, $n = 119$, $p < .001$). Vocabulary scores and reading comprehension scores showed the strongest correlation, $r = .77$, $n = 104$, $p < .001$.

TABLE 3 CORRELATIONS BETWEEN MEASURES OF READING ATTITUDE AND READING BEHAVIOR

	Reading attitude (MQ)	Reading attitude (AQ)	
		Hedonic component	Utilitarian component
Reading frequency (MQ)	.20*	.46***	.44***
Reading frequency (AQ)			
Storybooks	.39***	.50***	.49***
Non-fiction books	.21*	.26**	.19*
Picture books	.17	.16	.22*
Magazines	-.08	.04	.15
Comic books	.02	.12	.16
Poems and verses	.27**	.25**	.31**
Reading duration	.47***	.55***	.48***

Note. Statistically significant relationships – in both directions (i.e., with reading attitude as a predictor of reading behavior and vice versa) – also confirmed by regression analyses (controlling for background factors) are in boldface.

* $p < .05$. ** $p < .01$. *** $p < .001$.

RELATIONSHIPS BETWEEN READING ATTITUDE AND READING BEHAVIOR

In order to get insight into the relationship between the students' reading attitude and reading behavior, we first examined the correlations between these variables. Table 3 shows that a more positive reading attitude (MQ) was associated with a higher frequency, $r = .20$, $n = 140$, $p < .021$, and reading duration, $r = .47$, $n = 117$, $p < .001$. This was also true for the two reading attitude components. With regard to the different types of reading materials (see Table 3), the reading frequency of storybooks was most strongly related to the students' reading attitude, whereas no significant correlation was found for magazines and comic books.

To further examine the relationship between the students' reading attitude and behavior, regression analyses were conducted (see Appendix I), controlling for several background factors (i.e., parental educational level, gender, age, and reading climate at home). The models with the background variables and attitude measures explained between 12.0% and 36.2% of the variance in reading behavior; inversely, the total variance in reading attitude explained by the models including the background characteristics and a measurement of reading behavior as predictor ranged from 21.7% to 40.0%. After controlling for the background characteristics, reading frequency (MQ) was no longer a significant predictor of reading attitude as measured with the MQ (and vice versa). The relationships between the reading frequency of non-fiction and poems and verses with the reading attitude measures were also no longer significant. This also applies to the correlation between picture books and the utilitarian dimension. Performing the regression analyses backwards taught us that these relationships were no longer significant when the reading climate variable was added to the model. On the other hand, several other relationships remained significant if background factors were taken into account (in boldface in Table 3). Reading duration remained a positive predictor of all measures of reading attitude (and vice versa).

TABLE 4 MULTILEVEL REGRESSION OF READING BEHAVIOR: EFFECTS OF MEASURES OF READING ATTITUDE

Dependent variable	Independent variable					
	Reading attitude (MQ)		Reading attitude (AQ)			
	<i>F</i>	<i>p</i>	Hedonic component		Utilitarian component	
Reading frequency (MQ)	16.50***	.000	38.31***	.000	28.70***	.000
Reading frequency (AQ)						
Storybooks	22.51***	.000	45.79***	.000	38.54***	.000
Non-fiction books	4.48*	.036	6.71*	.010	3.18	.077
Picture books	2.67	.104	5.95**	.016	5.03*	.026
Magazines	.25	.617	3.30 ^a	.071	7.33*	.008
Comic books	.45	.504	2.96	.087	4.43*	.037
Poems and verses	6.95**	.009	7.05**	.009	9.02**	.003
Reading duration	32.14***	.000	52.18***	.000	26.76***	.000

Note. This table only presents *F*- and *p*-values for the predictors of interest. These are the main effects of measures of reading attitude on measures of reading behavior after taking into account the design of the study (i.e., controlling for the variables parental educational level, time, school, and School \times Time). Effects remaining statistically significant after controlling for background factors – on top of controlling for the design – are in boldface. This applies to both directions, with reading attitude as a predictor of reading behavior and vice versa.

^aConversely, the main effect of the reading frequency of magazines on the hedonic dimension was statistically significant, $F(1, 166) = 4.28$, $p = .040$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

For instance, reading duration explained an additional 10% of the variance in reading attitude (MQ) after controlling for the background factors, *R* squared change = .10, *F* change (1, 106) = 16.98, $p < .001$. Reading frequency as measured with the MQ remained significantly related to both reading attitude measures assessed with the AQ. The positive relationship between all measures of reading attitude with the reading frequency of storybooks in particular also remained significant.

So far, the correlations and results of the regression analyses indicated there is a positive relationship between the students' reading behavior and reading attitude: Children who considered reading an enjoyable and important activity tended to read more often and spent more time reading in their leisure time. In particular, the reading frequency of storybooks positively related to the students' attitude toward reading. The students' reading climate at home appeared to play an important role in their reading attitude and behavior.

Next, we examined the relationships between the children's reading behavior and reading attitude while taking into account the design of the study, performing multilevel analyses. Only analyses with the measurements of reading behavior as dependent variables (see Table 4) will be presented here, given that similar results were found when entering the reading attitude measures as dependent variables. We found positive main effects of the reading attitude measures on both reading frequency (MQ) and reading duration. As shown in Table 4, this was especially true for storybooks: Children with a more positive reading attitude read this type of reading material more frequently (reading attitude [MQ], $F(1, 173) = 22.51$, $p < .001$; hedonic dimension, $F(1, 166) = 45.79$, $p < .001$; utilitarian dimension, $F(1, 159) = 38.54$, $p < .001$). The aforementioned effects



remained significant after controlling for additional background factors (gender, age, and reading climate at home), with reading climate also having a significant positive effect on the children's reading frequency and duration as well as their reading attitude. Adding both the hedonic and utilitarian component in one model, while still controlling for the study's design, showed that only the hedonic dimension still had a significant effect on the students reading frequency (MQ) and reading duration.

Overall, in accordance with the correlations and the results of the regression analyses, the results of the multilevel analyses showed that children who think reading is fun and important were more likely to read more frequently and to spend more leisure time on reading. This was especially the case for the reading frequency of storybooks. Furthermore, reading climate at home was an important factor in children's reading attitude and behavior, and the hedonic component of reading attitude appeared to be more important for the students' reading behavior (and vice versa) than the utilitarian component.

RELATIONSHIPS OF READING AND LANGUAGE SKILLS WITH READING ATTITUDE AND READING BEHAVIOR

The relationships between reading and language skills on the one hand and reading attitude and reading behavior on the other were investigated similarly to the relationships between the students' reading attitude and reading behavior in the former sections. There were significant correlations between reading comprehension and spelling with reading attitude as measured with the MQ as well as with the hedonic subscale of the AQ: Students with a higher level of reading comprehension and better spelling skills were more likely to think reading is fun (see Table 5). No significant correlation was found between the language and reading skills with the utilitarian component of reading attitude, nor with reading frequency (MQ) and reading duration, although the positive relationships between reading frequency (MQ) and vocabulary and reading comprehension were marginally significant ($r = .18, n = 102, p = .078$; $r = .17, n = 118, p = .064$). Splitting up the sample into a group of students who perform above average compared with a national reference group (mean test score ≥ 3) and below average shows that the group of students with a larger vocabulary, and better reading comprehension and spelling skills reported a more positive reading attitude and more reading behavior, although most differences were not significant (see Appendix II).

As shown in Table 5, the reading frequency of several types of reading materials was negatively related to some of the test scores. Of the different book types, the reading frequency of storybooks showed the largest positive correlations with vocabulary, reading comprehension, and spelling, although the correlations were small and not significant ($r = .11, n = 98, p = .298$; $r = .11, n = 112, p = .235$; $r = .11, n = 110, p = .244$). As shown in Appendix II, the group of students who performed above average reported reading storybooks more often, whereas the other group read magazines more often. Children with smaller vocabularies and a below average reading comprehension

TABLE 5 CORRELATIONS BETWEEN MEASURES OF READING AND LANGUAGE SKILLS WITH READING ATTITUDE AND READING BEHAVIOR

	Vocabulary	Reading comprehension	Spelling
Reading attitude (MQ)	-.04	.19*	.21*
Reading attitude (AQ)			
Hedonic	.09	.24*	.22*
Utilitarian	.06	.18	.08
Reading frequency (MQ)	.18	.17	.10
Reading frequency (AQ)			
Storybooks	.11	.11	.11
Non-fiction books	-.04	.04	.10
Picture books	-.21*	-.14	-.05
Magazines	.01	-.10	-.24*
Comic books	.03	-.08	-.02
Poems and verses	-.36***	-.22*	.00
Reading duration	.11	.04	.09

Note. Statistically significant relationships – in both directions (i.e., with reading attitude and behavior as predictors of reading and language skills and vice versa) – also confirmed by regression-analyses (controlling for background factors) are in boldface. * $p < .05$. ** $p < .01$. *** $p < .001$.

level read picture books and poems and verses more often. A few differences were statistically significant.

The results of the regression analyses (see Appendix I) were largely in accordance with the correlations (statistically significant relationships confirmed by the regressions are in boldface in Table 5). After controlling for parental education level, age, gender, and reading climate at home, there still was a significant positive relationship between reading comprehension and the hedonic component of reading attitude, with reading comprehension explaining an additional 3%, R squared change = .03, F change (1, 99) = 4.67, $p = .033$. The negative relationships between the reading frequency of several types of reading materials with language and reading skills remained significant as well (i.e., picture books with vocabulary; magazines with spelling; and poems and verses with vocabulary and reading comprehension). However, the relationships between reading attitude (MQ) and reading comprehension and spelling, and the one between spelling and the hedonic dimension were no longer significant. Inspection of the variances explained by the final models (including the background factors and a measure of reading attitude, behavior, or skills) showed that reading attitude and reading behavior could be better explained by the factors included in the models (with R^2 ranging from .22 to .30, and from .09 to .35, respectively) than was the case for vocabulary (R^2 .06 - .19), reading comprehension (R^2 .07 - .13), and spelling (R^2 .08 - .16; see Appendix I).

Thus, the correlations and regression analyses showed that children with better reading comprehension and spelling skills were more likely to think reading is fun, with only the relationship between reading comprehension and the hedonic component remaining significant



TABLE 6 MULTILEVEL REGRESSION OF READING ATTITUDE AND READING BEHAVIOR: EFFECTS OF VOCABULARY, READING COMPREHENSION, AND SPELLING

Dependent variable	Independent variable					
	Vocabulary		Reading comprehension		Spelling	
	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>
Reading attitude (MQ)	.11	.742	2.56	.111	7.26**	.008
Reading attitude (AQ)						
Hedonic	2.26	.136	6.33*	.013	8.42**	.004
Utilitarian	1.25	.266	3.58	.061	1.50	.223
Reading frequency (MQ)	3.10	.080	3.75	.054	2.17	.143
Reading frequency (AQ)						
Storybooks	.57	.452	1.60	.208	1.30	.257
Non-fiction books	.10	.752	.01	.940	1.79	.183
Picture books	6.23*	.014	6.70*	.011	1.42	.235
Magazines	.05	.831	3.17	.077	4.93*	.028
Comic books	.73	.393	.56	.455	.21	.651
Poems and verses	15.13***	.000	11.36**	.001	.10	.758
Reading duration	2.27	.135	.75	.388	3.94*	.049

Note. This table only presents *F*- and *p*-values for the predictors of interest. These are the main effects of vocabulary, reading comprehension, and spelling on measures of reading attitude and reading behavior after taking into account the design of the study (i.e., controlling for the variables parental educational level, time, school, and School \times Time). Effects remaining statistically significant after controlling for background factors – on top of controlling for the design – are in boldface.

* $p < .05$. ** $p < .01$. *** $p < .001$.

after controlling for background factors. Reading frequency (MQ) and duration were positively related to the students' language and reading skills, albeit not significantly. The reading frequency of poems and verses was negatively related to vocabulary size and reading comprehension level, as was the case for picture books and vocabulary, and magazines and spelling skills. Storybooks on the other hand showed a positive, though not significant, relationship with reading and language ability. It proved difficult to explain variance in the students' language and reading proficiency with the variables included in the regression models (i.e., background factors and a measure of reading attitude or behavior).

In order to control for the design of the study, multilevel analyses were performed with the measures of reading behavior and attitude as dependent variables, and the reading and language test scores as independent variables in separate models (Table 6), and vice versa (Table 7). As shown in Table 6, there was a positive effect of reading comprehension on the hedonic dimension of reading attitude, $F(1, 116) = 6.33, p = .013$. Spelling had a positive effect on reading attitude (MQ), $F(1, 208) = 7.26, p = .008$, and on the hedonic component, $F(1, 119) = 8.42, p = .004$. Reverse effects were not found (see Table 7). This means that children who attained higher scores on spelling and reading comprehension were more likely to think reading is fun. With regard to the students' reading behavior (MQ), no effects of the reading and language skills were found on reading frequency (MQ), nor vice versa. There was, though, a positive main effect of spelling on

TABLE 7 MULTILEVEL REGRESSION OF VOCABULARY, READING COMPREHENSION, AND SPELLING: EFFECTS OF READING ATTITUDE AND READING BEHAVIOR

Independent variable	Dependent variable					
	Vocabulary		Reading comprehension		Spelling	
	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>
Reading attitude (MQ)	.01	.919	.54	.463	1.29	.257
Reading attitude (AQ)						
Hedonic	2.92	.091	.62	.434	3.23	.075
Utilitarian	.64	.427	.27	.606	.41	.523
Reading frequency (MQ)	2.40	.123	2.29	.131	.79	.377
Reading frequency (AQ)						
Storybooks	.48	.488	.00	.948	1.07	.304
Non-fiction books	.08	.774	.01	.922	1.63	.203
Picture books	.54	.463	4.40*	.038	2.06	.153
Magazines	.24	.629	4.70*	.032	4.72*	.031
Comic books	.65	.423	1.10	.297	.14	.712
Poems	5.71*	.018	6.60*	.011	.21	.644
Reading duration	4.31*	.040	.00	.993	3.36	.069

Note. This table only presents *F*- and *p*-values for the predictors of interest. These are the main effects of measures of reading attitude and reading behavior on language and reading skills after taking into account the design of the study (i.e., controlling for the variables parental educational level, time, school, and School \times Time). Effects remaining statistically significant after controlling for background factors – on top of controlling for the design – are in boldface.

* $p < .05$. ** $p < .01$. *** $p < .001$.

reading duration, $F(1, 50) = 3.94, p = .049$, as well as a positive main effect of reading duration on vocabulary, $F(1, 101) = 4.31, p = .040$: Children with better spelling skills tended to spend more leisure time on reading, and children who read more minutes had larger vocabularies. As indicated in Tables 6 and 7, a number of statistically significant relationships were found between the students' language and reading skills and the reading frequency of some types of reading materials. For instance, children with larger vocabularies and better reading comprehension skills were less likely to read picture books ($F[1, 127] = 6.23, p = .014$; $F[1, 152] = 6.70, p = .011$). Several significant effects appeared to persist after controlling for background factors on top of the design of the study (i.e., gender, age, and reading climate at home; in boldface in Table 6 and 7).

All in all, in line with the correlations we found, the multilevel analyses indicated that children with better spelling and reading comprehension skills were more likely to consider reading as a pleasurable activity, although these effects were no longer significant when controlling for background factors, as was also the case in the final model of the regression analyses. The multilevel analyses did not reveal significant relationships between the students' reading frequency (MQ) and their scores on the language and reading tests, whereas several negative relationships were found between the reading frequency of picture books, magazines, and poems, with vocabulary, reading comprehension, and/or spelling. Unlike the earlier analyses, while



controlling for the study's design, the multilevel analyses also showed that better spellers scored higher on reading duration, and that children who spent more time on reading had a larger vocabulary size.

DISCUSSION

As part of a Dutch research project on the effectiveness of a school library for ethnic minorities aimed at reading promotion, the current study examined the relationships between reading attitude, reading behavior, and vocabulary, reading comprehension, and spelling skills in non-Western migrant children (in grades 2 to 6) in particular. In accordance with previous research (e.g., Broeder et al., 2011; Broeder & Stokmans, 2013; Melnick et al., 2009; Stalpers, 2005; Stokmans & Broeder, 2009), our results demonstrate a positive relationship between the students' *attitude toward reading* and their *reading behavior*. Students who thought reading is pleasurable and important reported that they read more frequently and spent more time on reading during leisure time. Especially the students' reading frequency of storybooks was positively related to their reading attitude. These effects remained significant after controlling for gender, age, parental educational level, and reading climate at home. The hedonic component of reading attitude (i.e., reading is considered fun) appeared to be more important for the students' reading behavior (and vice versa) than the utilitarian component (i.e., reading is considered important), as was also found by other researchers (Baker & Wigfield, 1999; Broeder et al., 2011; Broeder & Stokmans, 2013; Stalpers, 2005; Stokmans 2006, 2009; van Elsäcker-Bok, 2002). It seems plausible that children who like to read are more likely to read more, and that positive reading experiences contribute to a more positive attitude toward reading (cf. Broeder & Stokmans, 2013; Melnick et al., 2009; Stalpers, 2005). Furthermore, in accordance with previous research (e.g., Kraaykamp, 2002; Notten, 2011; van Steensel, 2006; Verboord, 2003), the students' reading climate at home was an important factor for both their reading attitude and behavior.

Although we found that, on average, the students read fairly often and held quite positive attitudes toward reading, their test scores on vocabulary, reading comprehension, and spelling were (substantially) below average compared to the national reference group of the standardized tests administered (Cijvat & Bloemendaal, 2013; Feenstra et al., 2010; Moelands, 2010; Visser, 2013). These findings are in agreement with other studies on the reading attitude and behavior of migrant students (Meelissen et al., 2012; Netten, 2014; Stokmans & Broeder, 2009; van Elsäcker-Bok, 2002) and national research on reading and language proficiency of children with a non-Western migrant background (Gijsberts & Iedema, 2012; Herweijer, 2009; Netten, 2014). This is quite remarkable given the positive relations often demonstrated between reading behavior, reading attitude, and language and reading proficiency (e.g., Gille et al., 2010; Kortlever & Lemmens, 2012; Mol & Bus, 2011a, 2011b; Mullis et al., 2012; NEA, 2007; Stalpers, 2005). The (descriptive) findings seem to suggest that the relationships between reading and language

skills with reading attitude and reading behavior are more complicated and less clear-cut among children with a non-Western background compared to the general population.

Indeed, the results of our analyses indicate that the relationships between the students' reading and language skills with their reading attitude and reading behavior are far less pronounced than the ones between the students' reading behavior and attitude (cf. Aarnoutse & van Leeuwe, 1998; Baker & Wigfield, 1999; Stokmans, 2006; van Elsäcker-Bok, 2002). With regard to the students' *reading attitude* and *reading and language skills*, it was found that children with a higher reading comprehension level and better spelling skills were more likely to consider reading as a fun activity. After controlling for background factors, though, most results were no longer statistically significant. Furthermore, vocabulary scores were not related to the students' reading attitude. Thus, a high or low language and reading proficiency does not necessarily imply a particularly positive or negative attitude among the non-Western migrant students, which is in keeping with the findings of van Elsäcker-Bok (2002). In her dissertation, she indicated that "there is evidence that the relations between reading motivation and reading achievement are not consistent across cultural groups and that these relations are weaker for minority students than for mainstream students" (van Elsäcker-Bok, 2002, p. 197). Several explanations have been put forward, although not adequately tested. For instance, it can be argued that bilingual poor readers stay motivated despite low achievement scores because they may attribute their low reading performance to a low Dutch language ability (which can be improved over time) and not to a personal deficiency such as intelligence. Another possibility is that migrant students may be less likely to receive or effectively incorporate reliable feedback on their school performance, given that academic outcomes and norms tend to be lower in minority schools (cf. Bock & Moore, 1986; Stevenson et al., 1990; Weiner, 1985, as cited in van Elsäcker-Bok, 2002). Furthermore, many students in the present study performed (substantially) below average and literature suggest that relations between motivational measures and student achievement are perhaps more variable for lower achieving students (Baker & Wigfield, 1999) and that students may need a minimum level of reading ability before their reading enjoyment will influence their school achievement (Mol & Jolles, 2014).

With regard to the students' *reading behavior* and their *language and reading skills*, our findings were not in line with a bulk of research demonstrating a clear positive relationship between these factors (e.g., Mol & Bus, 2011a, 2011b; Mullis et al., 2007; NEA, 2007), although the findings were, again, more in agreement with the outcomes reported by van Elsäcker-Bok (2002) and those of several other studies (Aarnoutse & van Leeuwe, 1998; Carver & Leibert, 1995; Otter, 1993; Taylor et al., 1990). Although students with a larger vocabulary, and better reading comprehension and spelling skills reported more reading behavior in our study, most relationships were not statistically significant. We did find that better spellers tended to spend more leisure time on reading, and that students who read more minutes in their spare time, had larger vocabularies,



although these significant effects did not hold after controlling for background factors. Out of several types of reading materials, the reading frequency of storybooks showed the largest positive correlations with the measures of the children's reading and language skills (albeit not statistically significant), whereas the reading frequency of poems and verses was negatively related to their reading comprehension level and vocabulary size, as was true for picture books and vocabulary, and magazines and spelling skills. Sainsbury and Clarkson (2008), comparing high- and low-ability readers, also found that children in the low attaining group liked reading poems, and Kortlever and Lemmens (2012) did not find a relationship between learning outcomes and reading magazines. Heesters et al. (2007) demonstrated no or only a small relationship between reading ability and a positive attitude toward reading magazines and poems and verses in particular. Possibly, children with a higher reading and language ability are more inclined to read more challenging and longer texts. All in all, it was hard to explain variance in the students' language and reading proficiency.

Several explanations may be put forward. For instance, van Elsäcker-Bok (2002) suggested that reading in leisure time may not be as effective for ethnic minority students. She indicated that when a child's language knowledge is below a certain level, it may be hard to improve their reading comprehension skills by just reading individually at home without extra personal or contextual help. Migrant students and second language learners in particular seem to need a strong vocabulary basis for other factors, including independent reading activities, to achieve the same positive effects on reading comprehension as is the case for monolingual native Dutch students (van Elsäcker-Bok, 2002). In line with this, Mol and Bus (2011b) mentioned that readers whose vocabularies are smaller are most likely to have problems with learning vocabulary from and understanding age-appropriate texts. For poor readers, it also takes longer to acquire letter-to-sound rules, which may hamper learning word spellings, despite a comparable amount of print exposure to that of more proficient readers (Ehri & Saltmarsh, 1995; Share & Shalev, 2004, as cited by Mol & Bus, 2011b). Moreover, the children's leisure reading at home may not have been ideal. In general, migrant families are often larger and they often have less financial means, making it more difficult to create a place at home where a child can completely engage in reading a book. It is also possible that the children did not (always) read books that matched their reading proficiency level and use effective cognitive reading strategies required to enhance reading comprehension (Broeder et al., 2011; Otter, 1993; van Elsäcker-Bok, 2002). We also have to bear in mind that reading ability has a substantial genetic component, setting limits to what might be achieved with reading promotion. Davis et al. (2014) estimated that 66% of the variance in reading proficiency at age twelve is due to genetics, whereas the shared and non-shared environment effects account for 14% and 20% of the variance, respectively.

Several limitations of this study may also have affected the findings. For example, due to the quite small sample size, there was less power to detect statistically significant results. More and/or stronger relationships may have been found if a larger number of students had been included,

which was not possible in the present study as it was part of a research project involving students of two primary schools. Moreover, self-report surveys were used to measure the students' reading attitude, reading behavior, and reading climate at home. It is possible that reading frequency as assessed through single items shows lower predictive power given that they are more likely to be positively skewed (as compared to a print exposure checklist; cf. Mol & Bus, 2011). We cannot be sure that the students' answers completely covered their actual reading behavior, attitude, and reading climate at home, as bias may have occurred due to factors such as social desirability and insufficient understanding. However, literature on questionnaire research with children has suggested that children can complete a self-report from 7 years onward (Borgers & Hox, 2002; Borgers, Hox, & Sikkels, 2004; de Leeuw, 2011), the reliability of the reading attitude scales and reading climate at home scale was satisfactory, and the students' scores on reading frequency and reading attitude were also in line with national findings.

The finding that there was hardly any relationship between leisure reading and the students' language and reading skills is worth exploring in greater detail. To enhance power, future research is needed that involves a larger number of students. Other measurement instruments could also be used, such as a print exposure checklist measuring familiarity with book titles and authors or magazines, which are likely to be less biased (Cunningham & Stanovich, 1998; Mol & Bus, 2011b). Mol and Bus (2011b) indicated, though, that in constructing such a checklist one should consider that preferences for leisure time reading materials may vary across ethnic groups and socioeconomic status groups. Furthermore, it is interesting to examine the leisure reading of non-Western migrant students in more depth. What kind of reading materials do they read? Under what circumstances? And what kind of reading materials would be most beneficial to them? Moreover, to gain more insight into the relationships between reading for pleasure with language and reading skills and reading attitude, these relationships could also be explored in a more controlled setting (cf. Elley & Mangubhai, 1983), for instance at school or the (school) library, adjusting the reading materials and conditions more to the students' needs.

Overall, our findings suggest that independent leisure reading as measured in our study is not sufficient to significantly improve the reading and language skills in non-Western migrant children. We have to keep in mind that these students may need a certain threshold vocabulary size and reading comprehension level in order for reading for pleasure to be effective. Extra attention for disadvantaged students is therefore important. In addition, attention should be paid to the 'quality' of the children's leisure reading experiences. It is of importance that children can fully concentrate on reading and that they read materials that are compatible with their interests and abilities. Bilingual students and low-ability readers in particular may benefit from the provision of illustrations in support of the text, while making sure the level is challenging enough (Brabantse Netwerk Bibliotheek, 2013; Otter, 1993; van Elsäcker-Bok, 2002). Furthermore, our findings underline enhancing the students' attitude toward reading as an important aspect of the

national Library at School program, given the clear positive relationship we found between reading attitude and reading behavior. Moreover, reading climate at home played an important role in both the students' reading attitude and reading behavior, stressing the importance of involving non-Western migrant parents when it comes to reading promotion. Increased effort may be needed for schools and libraries to reach and support these parents, as it has been suggested that there is a barrier between them and the school and that they often feel less responsible for actively stimulating their children's cognitive development (Beks & de Natris, 2008). It is probable that by providing wide access to and helping to select appropriate reading materials that can also be taken home, as well as by providing stimulating reading activities, and supporting parents and schools, school libraries may enhance the reading attitude, reading behavior, and language and reading skills of non-Western migrant students and the relationships between these factors.

Notes

1. According to Statistics Netherlands a person is considered migrant, also referred to as *allochtonous*, if at least one parent was born outside the Netherlands. Thus, migrant groups also include persons who were born in the Netherlands themselves, called *second generation migrants*. A distinction can be made between migrants originating from Western countries (Europe [excluding Turkey], North America, Oceania, Indonesia, and Japan) and migrants coming from non-Western countries (Turkey, Africa, Latin America, and the rest of Asia; Alders, 2003).
2. These three elements are part of the language element of the "Cito-eindtoets", a national test administered in the final grade of primary school, which plays an important role in determining the students' secondary education track (van Boxtel, Engelen, & de Wijs, 2010; Herweijer, 2009).
3. The present study is part of a larger research project involving two primary schools: one with an integrated library facility (i.e., the experimental school) and one without a school library program (i.e., the control school). However, in the present study, we will not present differences between these schools, given that we are merely interested in the relationships between the students' reading attitude, behavior, and skills.
4. More information (in Dutch) about the monitor can be found at www.debibliotheekopschool.nl
5. The language students speak with their parents may play a role in their reading and language skills (Hartgers, 2012; Hemker & van Weerden, 2014; Herweijer, 2009). However, in our study, a value for this variable was only available for 59.4% of the participants ($n = 85$). In order not to lose a substantial amount of data, the variable language spoken with parents was not included in our analyses. An inspection of the correlations between the students' reading and language skills with their reading attitude and reading behavior showed that most outcomes were similar for the group of students speaking only Dutch with their parents and the group of students speaking in a non-Dutch language or both Dutch and another language with their parents.

APPENDIX I & II



TABLE A.1A PREDICTORS OF READING ATTITUDE (MQ)

Variable	Predictor of interest				
	Reading frequency (MQ) <i>B</i>	Reading duration <i>B</i>	Vocabulary <i>B</i>	Reading comprehension <i>B</i>	Spelling <i>B</i>
Constant	2.98***	3.12***	3.18***	2.96***	2.88
Parental education	.02	.02	.02	.02	.03
Age	-.07*	-.09*	-.05	-.06	-.06
Gender	-.28**	-.30**	-.30*	-.30**	-.32**
Reading climate	.32***	.19*	.33***	.35***	.35***
Reading behavior ^a	.09	.21***	-	-	-
Skill ^b	-	-	-.02	.09	.07
<i>R</i> ²	.27	.36	.23	.30	.30
<i>F</i>	7.90***	11.92***	5.35***	8.52***	8.46***

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading behavior represents the predictor of interest: reading frequency or reading duration.

^b The variable skill represents the predictor of interest: vocabulary, reading comprehension, or spelling.

p* < .05. *p* < .01. ****p* < .001.

TABLE A.1B PREDICTORS OF READING ATTITUDE (MQ)

Variable	Predictor of interest					
	Storybooks <i>B</i>	Non-fiction books <i>B</i>	Picture books <i>B</i>	Magazines <i>B</i>	Comics <i>B</i>	Poems and verses <i>B</i>
Constant	2.88***	3.22***	3.25***	3.12***	3.25***	3.20***
Parental education	.01	.02	.01	.03	.02	.03
Age	-.07	-.07	-.07	-.05	-.07	-.08*
Gender	-.25*	-.29**	-.29**	-.28**	-.28*	-.26*
Reading climate	.27**	.33***	.37***	.40***	.36***	.31***
Reading material ^a	.12*	.02	-.02	-.08	-.01	.05
<i>R</i> ²	.29	.26	.26	.28	.26	.27
<i>F</i>	8.57***	7.41***	7.41	8.36***	7.37***	7.75***

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading material refers to the reading frequency of the predictor of interest: storybooks, non-fiction books, picture books, magazines, comic books, or poems and verses.

p* < .05. *p* < .01. ****p* < .001.

TABLE A.2A PREDICTORS OF READING ATTITUDE (AQ): HEDONIC COMPONENT

Variable	Predictor of interest				
	Reading frequency (MQ) <i>B</i>	Reading duration <i>B</i>	Vocabulary <i>B</i>	Reading comprehension <i>B</i>	Spelling <i>B</i>
Constant	2.00***	2.51***	2.42***	2.34***	2.14***
Parental education	-.00	-.00	-.01	-.01	-.01
Age	-.04	-.06	-.00	-.02	-.01
Gender	-.15	-.16	-.15	-.15	-.14
Reading climate	.30***	.22**	.32***	.37***	.37***
Reading behavior ^a	.21***	.23***	-	-	-
Skill ^b	-	-	.03	.11*	.09
<i>R</i> ²	.36	.40	.22	.29	.28
<i>F</i>	11.92***	13.89***	4.92**	8.15***	7.68***

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading behavior represents the predictor of interest: reading frequency or reading duration.

^b The variable skill represents the predictor of interest: vocabulary, reading comprehension, or spelling.

p* < .05. *p* < .01. ****p* < .001.

TABLE A.2B PREDICTORS OF READING ATTITUDE (AQ): HEDONIC COMPONENT

Variable	Predictor of interest					
	Storybooks <i>B</i>	Non-fiction books <i>B</i>	Picture books <i>B</i>	Magazines <i>B</i>	Comics <i>B</i>	Poems and verses <i>B</i>
Constant	2.09***	2.58***	2.64***	2.54***	2.57***	2.58***
Parental education	-.01	.00	-.01	.01	.00	.01
Age	-.03	-.04	-.04	-.03	-.04	-.04
Gender	-.10	-.16	-.16	-.16	-.17	-.15
Reading climate	.27**	.36***	.42***	.41***	.38***	.37***
Reading material ^a	.19***	.03	-.04	-.04	.02	.03
<i>R</i> ²	.34	.26	.27	.27	.26	.26
<i>F</i>	10.88***	7.39***	7.49***	7.48***	7.32***	7.37***

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading material refers to the reading frequency of the predictor of interest: storybooks, non-fiction books, picture books, magazines, comic books, or poems and verses.

p* < .05. *p* < .01. ****p* < .001.



TABLE A.3A PREDICTORS OF READING ATTITUDE (AQ): UTILITARIAN COMPONENT

Variable	Predictor of interest				
	Reading frequency (MQ) <i>B</i>	Reading duration <i>B</i>	Vocabulary <i>B</i>	Reading comprehension <i>B</i>	Spelling <i>B</i>
Constant	1.77***	2.22***	2.05***	1.99***	1.97***
Parental education	-.04	-.04	-.04	-.05	-.05
Age	.03	.02	.07	.05	.06
Gender	-.08	-.09	-.17	-.08	-.08
Reading climate	.27***	.23**	.29***	.34***	.35***
Reading behavior ^a	.18***	.16***	-	-	-
Skill ^b	-	-	.03	.09	.04
<i>R</i> ²	.31	.31	.25	.25	.24
<i>F</i>	9.44***	9.14***	5.82***	6.70***	6.01***

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading behavior represents the predictor of interest: reading frequency or reading duration.

^b The variable skill represents the predictor of interest: vocabulary, reading comprehension, or spelling.

p* < .05. *p* < .01. ****p* < .001.

TABLE A.3B PREDICTORS OF READING ATTITUDE (AQ): UTILITARIAN COMPONENT

Variable	Predictor of interest					
	Storybooks <i>B</i>	Non-fiction books <i>B</i>	Picture books <i>B</i>	Magazines <i>B</i>	Comics <i>B</i>	Poems and verses <i>B</i>
Constant	1.76***	2.28***	2.27***	2.28***	2.24***	2.24***
Parental education	-.04	-.03	-.03	-.03	-.03	-.02
Age	.04	.03	.03	.03	.03	.03
Gender	-.03	-.09	-.09	-.09	-.11	-.06
Reading climate	.23**	.35***	.34***	.35***	.33***	.31***
Reading material ^a	.19***	-.00	.00	.00	.03	.05
<i>R</i> ²	.33	.22	.22	.22	.22	.23
<i>F</i>	10.07***	5.78***	5.78***	5.78***	5.91***	6.28***

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading material refers to the reading frequency of the predictor of interest: storybooks, non-fiction books, picture books, magazines, comic books, or poems and verses.

p* < .05. *p* < .01. ****p* < .001.

TABLE A.4 PREDICTORS OF READING FREQUENCY (MQ)

Variable	Predictor of interest					
	Reading attitude (MQ) <i>B</i>	Hedonic <i>B</i>	Utilitarian <i>B</i>	Vocabulary <i>B</i>	Reading comprehension <i>B</i>	Spelling <i>B</i>
Constant	2.20*	1.04	1.26	2.95**	2.59**	2.47**
Parental education	.02	.02	.05	.01	-.00	.01
Age	.03	.06	.01	.02	.03	.04
Gender	.00	.05	-.00	-.17	-.06	-.08
Reading climate	.35*	.16	.18	.34*	.41**	.41**
Reading attitude ^a	.22	.67***	.67***	-	-	-
Skill ^b	-	-	-	.11	.16	.12
<i>R</i> ²	.12	.23	.21	.09	.13	.12
<i>F</i>	2.88*	6.04***	5.38***	1.86	3.03*	2.70*

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading attitude represents the predictor of interest: reading attitude, hedonic dimension, or utilitarian component.

^b The variable skill represents the predictor of interest: vocabulary, reading comprehension, or spelling.

p* < .05. *p* < .01. ****p* < .001.

TABLE A.5 PREDICTORS OF READING DURATION

Variable	Predictor of interest					
	Reading attitude (MQ) <i>B</i>	Hedonic <i>B</i>	Utilitarian <i>B</i>	Vocabulary <i>B</i>	Reading comprehension <i>B</i>	Spelling <i>B</i>
Constant	-1.58	-1.81*	-1.21	.66	.74	.59
Parental education	-.00	.02	.04	.02	-.00	.01
Age	.11	.11	.06	.06	.05	.05
Gender	.23	.14	.07	.05	.07	.05
Reading climate	.51***	.40**	.49**	.68***	.74***	.72***
Reading attitude ^a	.65***	.84***	.70***			
Skill ^b				.06	.01	.08
<i>R</i> ²	.32	.36	.30	.22	.22	.23
<i>F</i>	10.00***	11.83***	8.92***	4.94***	5.59***	5.77***

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading attitude represents the predictor of interest: reading attitude, hedonic dimension, or utilitarian component.

^b The variable skill represents the predictor of interest: vocabulary, reading comprehension, or spelling.

p* < .05. *p* < .01. ****p* < .001.



TABLE A.6 PREDICTORS OF READING FREQUENCY (AQ): STORYBOOKS

Variable	Predictor of interest					
	Reading attitude (MQ) <i>B</i>	Hedonic <i>B</i>	Utilitarian <i>B</i>	Vocabulary <i>B</i>	Reading comprehension <i>B</i>	Spelling <i>B</i>
Constant	1.77*	1.13	1.05	2.20*	2.96**	2.92**
Parental education	.03	.04	.07	.11	.03	.04
Age	-.02	-.01	-.06	.01	-.06	-.06
Gender	-.22	-.23	-.26	-.37	-.30	-.33
Reading climate	.52***	.39**	.37**	.58***	.62***	.61***
Reading attitude ^a	.33*	.62***	.74***	-	-	-
Skill ^b	-	-	-	.07	.05	.05
<i>R</i> ²	.27	.31	.33	.24	.23	.24
<i>F</i>	7.70***	9.44***	10.31***	5.46***	6.13***	6.19***

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading attitude represents the predictor of interest: reading attitude, hedonic dimension, or utilitarian component.

^b The variable skill represents the predictor of interest: vocabulary, reading comprehension, or spelling.

p* < .05. *p* < .01. ****p* < .001

TABLE A.8 PREDICTORS OF READING FREQUENCY (AQ): PICTURE BOOKS

Variable	Predictor of interest					
	Reading attitude (MQ) <i>B</i>	Hedonic <i>B</i>	Utilitarian <i>B</i>	Vocabulary <i>B</i>	Reading comprehension <i>B</i>	Spelling <i>B</i>
Constant	1.36	1.81	1.15	1.51	1.51	1.34
Parental education	-.19	-.20	-.20	-.07	-.14	-.17
Age	-.03	-.06	-.05	-.05	-.05	-.04
Gender	-.02	.01	.05	-.07	-.00	-.00
Reading climate	.94***	1.01***	.91***	.97***	.92***	.89***
Reading attitude ^a	-.11	-.23	.02	-	-	-
Skill ^b	-	-	-	-.35*	-.22	-.08
<i>R</i> ²	.20	.22	.21	.26	.22	.20
<i>F</i>	5.36***	5.80***	5.59***	6.27***	5.59***	4.80**

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading attitude represents the predictor of interest: reading attitude, hedonic dimension, or utilitarian component.

^b The variable skill represents the predictor of interest: vocabulary, reading comprehension, or spelling.

p* < .05. *p* < .01. ****p* < .001

TABLE A.7 PREDICTORS OF READING FREQUENCY (AQ): NON-FICTION BOOKS

Variable	Predictor of interest					
	Reading attitude (MQ) <i>B</i>	Hedonic <i>B</i>	Utilitarian <i>B</i>	Vocabulary <i>B</i>	Reading comprehension <i>B</i>	Spelling <i>B</i>
Constant	.56	.28	.70	1.11	.82	.60
Parental education	-.01	.00	.00	-.01	.01	.00
Age	.03	.05	.04	.03	.03	.04
Gender	.21	.19	.17	.22	.17	.17
Reading climate	.80***	.75***	.81***	.79***	.83***	.81***
Reading attitude ^a	.08	.15	-.02	-	-	-
Skill ^b	-	-	-	-.16	-.04	.04
<i>R</i> ²	.22	.22	.21	.21	.23	.22
<i>F</i>	6.12***	5.76***	5.64***	4.86**	5.90***	5.69***

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading attitude represents the predictor of interest: reading attitude, hedonic dimension, or utilitarian component.

^b The variable skill represents the predictor of interest: vocabulary, reading comprehension, or spelling.

p* < .05. *p* < .01. ****p* < .001.

TABLE A.9 PREDICTORS OF READING FREQUENCY (AQ): MAGAZINES

Variable	Predictor of interest					
	Reading attitude (MQ) <i>B</i>	Hedonic <i>B</i>	Utilitarian <i>B</i>	Vocabulary <i>B</i>	Reading comprehension <i>B</i>	Spelling <i>B</i>
Constant	.01	-.91	-1.54	-2.43	-1.14	-.29
Parental education	.12	.13	.13	.23*	.12	.12
Age	.25**	.29**	.30**	.40***	.28**	.25*
Gender	-.07	-.04	-.00	-.15	.05	-.02
Reading climate	.76***	.68**	.59**	.57**	.62**	.62**
Reading attitude ^a	-.42	-.23	.02	-	-	-
Skill ^b	-	-	-	-.03	-.16	-.29*
<i>R</i> ²	.18	.17	.17	.19	.15	.20
<i>F</i>	4.76**	4.34**	4.14**	4.20**	3.64**	4.81**

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading attitude represents the predictor of interest: reading attitude, hedonic dimension, or utilitarian component.

^b The variable skill represents the predictor of interest: vocabulary, reading comprehension, or spelling.

p* < .05. *p* < .01. ****p* < .001.



TABLE A.10 PREDICTORS OF READING FREQUENCY (AQ): COMIC BOOKS

Variable	Predictor of interest					
	Reading attitude (MQ) <i>B</i>	Hedonic <i>B</i>	Utilitarian <i>B</i>	Vocabulary <i>B</i>	Reading comprehension <i>B</i>	Spelling <i>B</i>
Constant	1.59	.98	.86	.48	1.83	1.69
Parental education	-.06	-.05	-.05	.05	-.06	-.07
Age	.07	.10	.09	.17	.05	.06
Gender	.69**	.72**	.72**	.62*	.72**	.73**
Reading climate	.50**	.42*	.41*	.49**	.48**	.46**
Reading attitude ^a	-.06	.11	.18	-	-	-
Skill ^b	-	-	-	-.03	-.09	.00
<i>R</i> ²	.15	.15	.15	.15	.16	.14
<i>F</i>	3.72**	3.61**	3.68**	3.10*	3.70**	3.33**

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading attitude represents the predictor of interest: reading attitude, hedonic dimension, or utilitarian component.

^b The variable skill represents the predictor of interest: vocabulary, reading comprehension, or spelling.

p* < .05. *p* < .01. ****p* < .001.

TABLE A.11 PREDICTORS OF READING FREQUENCY (AQ): POEMS AND VERSES

Variable	Predictor of interest					
	Reading attitude (MQ) <i>B</i>	Hedonic <i>B</i>	Utilitarian <i>B</i>	Vocabulary <i>B</i>	Reading comprehension <i>B</i>	Spelling <i>B</i>
Constant	-.26	.29	-.14	.14	.90	.08
Parental education	-.22*	-.22*	-.21*	-.09	-.17	-.22*
Age	.10	.08	.06	.19	.09	.13
Gender	-.47	-.49*	-.49*	-.57*	-.61*	-.60*
Reading climate	.65**	.69**	.63**	.83***	.82***	.75***
Reading attitude ^a	.26	.16	.37	-	-	-
Skill ^b	-	-	-	-.50***	-.31*	.04
<i>R</i> ²	.22	.22	.23	.35	.26	.22
<i>F</i>	6.12***	5.75***	6.14***	9.44***	7.09***	5.57***

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading attitude represents the predictor of interest: reading attitude, hedonic dimension, or utilitarian component.

^b The variable skill represents the predictor of interest: vocabulary, reading comprehension, or spelling.

p* < .05. *p* < .01. ****p* < .001.

TABLE A.12A PREDICTORS OF VOCABULARY

Variable	Predictor of interest				
	Reading attitude (MQ) <i>B</i>	Hedonic <i>B</i>	Utilitarian <i>B</i>	Reading frequency (MQ) <i>B</i>	Reading duration <i>B</i>
Constant	1.83	1.67	1.59	1.28	1.61
Parental education	.12	.12	.13	.12	.12
Age	-.04	-.08	-.09	-.04	-.04
Gender	.16	.17	.18	.19	.17
Reading climate	.16	.14	.12	.10	.10
Reading attitude ^a	-.05	.12	.18	-	-
Reading behavior ^b	-	-	-	.12	.06
<i>R</i> ²	.06	.08	.08	.07	.06
<i>F</i>	1.11	1.52	1.57	1.33	1.15

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading attitude represents the predictor of interest: reading attitude, hedonic dimension, or utilitarian component.

^b The variable reading behavior represents the predictor of interest: reading frequency or reading duration.

p* < .05. *p* < .01. ****p* < .001.

TABLE A.12B PREDICTORS OF VOCABULARY

Variable	Predictor of interest					
	Storybooks <i>B</i>	Non-fiction books <i>B</i>	Picture books <i>B</i>	Magazines <i>B</i>	Comics <i>B</i>	Poems and verses <i>B</i>
Constant	1.48	1.76	1.84	1.61	1.67	1.46
Parental education	.11	.12	.10	.12	.12	.08
Age	-.04	-.04	-.05	-.03	-.04	.02
Gender	.20	.20	.15	.17	.19	-.02
Reading climate	.10	.24	.32*	.16	.16	.37*
Reading material ^a	.08	-.12	-.19*	-.02	-.02	-.29***
<i>R</i> ²	.06	.08	.12	.06	.06	.19
<i>F</i>	1.18	1.45	2.47*	1.10	1.10	4.27**

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading material refers to the reading frequency of the predictor of interest: storybooks, non-fiction books, picture books, magazines, comic books, or poems and verses.

p* < .05. *p* < .01. ****p* < .001.



TABLE A.13A PREDICTORS OF READING COMPREHENSION

Variable	Predictor of interest				
	Reading attitude (MQ) <i>B</i>	Hedonic <i>B</i>	Utilitarian <i>B</i>	Reading frequency (MQ) <i>B</i>	Reading duration <i>B</i>
Constant	.97	1.07	1.22	1.31	1.86*
Parental education	.12	.13	.15	.13	.13
Age	-.04	-.08	-.11	-.07	-.06
Gender	-.03	-.06	-.09	-.11	-.12
Reading climate	.07	.04	.05	.09	.17
Reading attitude ^a	.29	.41*	.42	-	-
Reading behavior ^b	-	-	-	.19	.01
<i>R</i> ²	.09	.13	.12	.10	.07
<i>F</i>	2.01	2.88*	2.72*	2.12	1.45

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading attitude represents the predictor of interest: reading attitude, hedonic dimension, or utilitarian component.

^b The variable reading behavior represents the predictor of interest: reading frequency or reading duration.

p* < .05. *p* < .01. ****p* < .001

TABLE A.13B PREDICTORS OF READING COMPREHENSION

Variable	Predictor of interest					
	Storybooks <i>B</i>	Non-fiction books <i>B</i>	Picture books <i>B</i>	Magazines <i>B</i>	Comics <i>B</i>	Poems and verses <i>B</i>
Constant	1.69	1.90*	2.01*	1.73	1.98*	1.93*
Parental education	.13	.13	.11	.14	.13	.09
Age	-.06	-.06	-.07	-.03	-.06	-.04
Gender	-.10	-.12	-.12	-.11	-.07	-.24
Reading climate	.14	.21	.29	.23	.21	.33*
Reading material ^a	.06	-.04	-.13	-.10	-.07	-.20*
<i>R</i> ²	.07	.07	.09	.08	.07	.13
<i>F</i>	1.52	1.48	2.10	1.79	1.58	2.89*

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading material refers to the reading frequency of the predictor of interest: storybooks, non-fiction books, picture books, magazines, comic books, or poems and verses.

p* < .05. *p* < .01. ****p* < .001.

TABLE A.14A PREDICTORS OF SPELLING

Variable	Predictor of interest				
	Reading attitude (MQ) <i>B</i>	Hedonic <i>B</i>	Utilitarian <i>B</i>	Reading frequency (MQ) <i>B</i>	Reading duration <i>B</i>
Constant	2.94*	3.27**	3.83**	3.34**	3.74***
Parental education	.05	.06	.07	.06	.06
Age	-.16	-.22**	-.24**	-.18*	-.18*
Gender	-.03	-.07	-.11	-.10	-.12
Reading climate	.04	.03	.11	.07	.07
Reading attitude ^a	.28	.40	.21	-	-
Reading behavior ^b	-	-	-	.17	.10
<i>R</i> ²	.10	.16	.14	.10	.09
<i>F</i>	2.27	3.69**	3.02*	2.24	1.98

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading attitude represents the predictor of interest: reading attitude, hedonic dimension, or utilitarian component.

^b The variable reading behavior represents the predictor of interest: reading frequency or reading duration.

p* < .05. *p* < .01. ****p* < .001

TABLE A.14B PREDICTORS OF SPELLING

Variable	Predictor of interest					
	Storybooks <i>B</i>	Non-fiction books <i>B</i>	Picture books <i>B</i>	Magazines <i>B</i>	Comics <i>B</i>	Poems and verses <i>B</i>
Constant	3.61**	3.80***	3.89***	3.52**	3.83***	3.82***
Parental education	.06	.06	.05	.08	.06	.07
Age	-.18*	-.18*	-.18*	-.12	-.18*	-.18*
Gender	-.10	-.13	-.12	-.12	-.12	-.10
Reading climate	.10	.11	.19	.27	.15	.12
Reading material ^a	.07	.04	-.05	-.22*	.00	.03
<i>R</i> ²	.09	.09	.09	.14	.08	.09
<i>F</i>	1.89	1.86	1.91	3.28**	1.82	1.85

Note. Although stepwise regressions were performed, only the results of the final model are presented in the table for the sake of parsimony.

^a The variable reading material refers to the reading frequency of the predictor of interest: storybooks, non-fiction books, picture books, magazines, comic books, or poems and verses.

p* < .05. *p* < .01. ****p* < .001.

TABLE B.1 SCORES (MEANS AND SDS) ON READING ATTITUDE AND READING BEHAVIOR OF CHILDREN PERFORMING BELOW AND ABOVE AVERAGE

	Vocabulary (<i>n</i> = 102)		Reading comprehension (<i>n</i> = 118)		Spelling (<i>n</i> = 123)	
	Below average	Above average	Below average	Above average	Below average	Above average
Reading attitude (MQ)	3.31 (.64)	3.37 (.58)	3.19** (.65)	3.63 (.45)	3.19 (.67)	3.32 (.62)
Reading attitude (AQ)						
Hedonic	3.09 (.50)	3.20 (.57)	3.00* (.59)	3.35 (.41)	3.04 (.60)	3.13 (.56)
Utilitarian	3.28 (.47)	3.35 (.47)	3.23 (.53)	3.48 (.37)	3.27 (.45)	3.30 (.61)
Reading frequency (MQ)	3.98 (1.04)	4.24 (.83)	3.96 (1.02)	4.43 (.75)	3.93 (.99)	4.20 (.96)
Reading frequency (AQ)						
Storybooks	3.83 (1.05)	4.09 (.81)	3.75 (1.07)	4.08 (.73)	3.72 (1.12)	3.94 (.85)
Non-fiction books	3.03 (1.26)	2.91 (1.06)	2.91 (1.20)	3.28 (1.18)	2.89 (1.23)	3.13 (1.15)
Picture books	2.57 (1.47)	2.00 (1.35)	2.52 (1.42)	2.15 (1.49)	2.43 (1.39)	2.52 (1.53)
Magazines	3.06 (1.40)	2.74 (1.37)	3.10 (1.36)	2.68 (1.29)	3.25* (1.32)	2.65 (1.31)
Comics	3.54 (1.21)	3.50 (1.29)	3.53 (1.24)	3.28 (1.15)	3.47 (1.22)	3.50 (1.24)
Poems and verses	2.69** (1.44)	1.65 (1.11)	2.51 (1.43)	2.05 (1.15)	2.37 (1.38)	2.55 (1.44)
Reading duration	2.89 (1.02)	3.09 (1.02)	2.92 (1.09)	3.00 (1.01)	2.92 (1.13)	2.93 (.98)

* $p < .05$. ** $p < .01$. *** $p < .001$.

CHAPTER 6

GENERAL DISCUSSION



This research aimed at providing insight into the effects of an integrated library facility in a Dutch primary school on the reading attitude, reading behavior, and reading and language skills in students with a non-Western migrant background, an educationally disadvantaged group in the Netherlands (Gijsberts & Iedema, 2012). For this purpose, we have conducted a literature review (Chapter 2), followed by three empirical studies (Chapters 3, 4, and 5). The literature review showed that ample studies have addressed the effectiveness of school libraries since the 1960s (Roberson, Schweinle, & Applin, 2003). A considerable body of research carried out outside the Netherlands has shown that school libraries are related to better school performance (e.g., Clark, 2010; Kachel, 2013; Lance, Welborn, & Hamilton-Pennell, 1993; Lonsdale, 2003; Scholastic, 2008; Williams & Wavell, 2001; Williams, Wavell, & Morisson, 2013). Furthermore, it has been established that increased access to books, as provided by school libraries, is related to a higher frequency of reading (Krashen, 2004b; Krashen, Lee, & McQuillan, 2012) as well as to a higher reading enjoyment (Lindsay, 2010). In line with this, school library users have been found to hold a more positive attitude toward reading than non-users (Clark, 2010). The relatively limited amount of Dutch studies on school libraries has also yielded positive outcomes, such as a growth in book loans, more leisure reading, a more positive attitude toward books, and higher reading comprehension scores (e.g., Geurtsen, 2008; Nielen & Bus, 2015; Oberon, 2011).

Despite what we know from these previous studies on school populations in general, as yet little is known about the effects of school libraries' reading promotion efforts on ethnic minority students in particular. Several American studies focusing on the impact of school library characteristics on student achievement have attempted to statistically adjust for school and student characteristics, including the students' racial or ethnic background, and found that linkages between library characteristics and improved test scores appeared to persist after making such adjustments (Burgin & Bracy, 2003; Lance, Rodney, & Hamilton-Pennell, 2005; Michie & Chaney, 2009). Moreover, Lance and Schwarz (2012) indicated that Hispanic and African American students benefited proportionally more from strong school library programs (in Pennsylvania) than students in general. This suggests that adequate school library programs can play a role in helping to close the achievement gap between advantaged and disadvantaged students (Williams et al., 2013).

However, it is not self-evident that these findings apply across different cultural and educational contexts. For example, migrant groups in the Netherlands are not readily comparable with ethnic minority groups in a country like the United States, and the implementation of school library programs, including the role of the librarian, can differ across countries (Brabantse Netwerk Bibliotheek, 2013). In line with this, it has been argued that findings from studies conducted outside the Netherlands cannot necessarily be considered valid to the Dutch situation (Veenstra, 1999). Hitherto, though, no Dutch research on school libraries had explicitly addressed migrant students in particular, and literature on the role of the home environment, schools, and libraries – which can shed more light on the possible effects of school libraries for these children in the Netherlands – is

ambiguous (Chapter 2). Moreover, literature has indicated that reading attitude, reading behavior, and reading and language proficiency – central factors when it comes to reading promotion through school libraries – are reciprocally related (e.g., Kortlever & Lemmens, 2012; Mol & Bus, 2011a, 2011b; Mullis, Martin, Foy, & Drucker, 2012; Stalpers, 2005). Strikingly, the language and reading skills of non-Western migrant children in the Netherlands clearly lag behind (Gijsberts & Iedema, 2012), whereas these children do not have a less positive attitude toward reading than native Dutch students (Netten, 2014; Stokmans & Broeder, 2009; van Elsäcker-Bok, 2002) nor do they read less (Meelissen et al., 2012; Netten, 2014). Perhaps relationships between these factors are less evident for children with a migrant background (cf. van Elsäcker-Bok, 2002). Gaps in existing research need to be bridged in order to guide effective policies and practices around reading promotion. Therefore, the present research project focused on students with a non-Western migrant background in the Dutch context.

For the empirical part of this research, we conducted a longitudinal study with a quasi-experimental design, involving students with a non-Western background (grades 2 to 6) of two Dutch primary schools: one with an integrated library facility (i.e., the experimental school) and one without such a school library (i.e., the control school). Both schools had a multicultural population consisting of many non-Western migrant children with learning disadvantages, which is often observed in the Netherlands, in particular in highly urbanized areas. Data were gathered over three successive school years (2011/2012, 2012/2013, and 2013/2014), using both questionnaires (i.e., the national *Monitor the Library at School* and additional surveys) and tests (i.e., nationally standardized tests from the pupil monitoring system devised by Cito, the National Institute for Educational Measurement in the Netherlands).

Firstly, we investigated whether the school library had an effect on the *reading attitude and reading behavior* of the students (Chapter 3). Secondly, we analyzed whether the school library led to better *reading and language skills* (Chapter 4). Thirdly, we focused on the *relationships* between the students' *reading attitude, reading behavior, and reading and language skills* (Chapter 5). When discussing the (effectiveness of the) school library, we basically refer to the school library concept as a whole, including the broad collection, library visits, the presence of a reading and media coach, reading promotion lessons, and reading logs (see Appendix A). The remainder of this chapter summarizes the main findings, elaborates on limitations of the research project, and discusses the scientific and societal contribution of this project, as well as implications for future research and practice.

MAIN FINDINGS

EFFECTS ON READING ATTITUDE AND BEHAVIOR

On average, the students of both the experimental and control school had a quite positive reading attitude and read fairly often in their leisure time, as assessed through student questionnaires, which is in agreement with the findings of the national *Monitor the Library at School* (Broekhof &



Broek, 2013). The *reading attitude* scores on the *utilitarian subscale* were somewhat higher than those on the *hedonic subscale*, meaning that the students considered reading somewhat more useful than enjoyable. With regard to *reading frequency*, the students read about a couple of times a week to a couple of times a month on average. In line with results from nationwide research (e.g., Broekhof & Broek, 2013), storybooks and comic books were the most popular *reading materials* at both schools, whereas picture books and poems and verses were least often read out of six different types of reading materials. Non-fiction (informative) books and magazines scored in between. With regard to *reading duration* and *diversity in reading preferences*, children of both schools reported reading on average approximately half an hour a day and they liked four to five different topics on average. Of the thirteen topics presented to them, the children most often preferred to read about sports, creepy things, friendship, animals, and humor.

Our study showed a positive effect of the school library on the utilitarian component of the students' reading attitude: Over time, students attending the experimental school considered reading more useful than students visiting the control school. Although the experimental school students also considered reading more fun over time than the control school students, this difference was not statistically significant. We were not able to demonstrate an effect of the school library on the students' reading frequency, nor with respect to their reading duration and diversity in reading preferences. A possible explanation may follow from the fact that the experimental school students were not allowed to take home the school library books they borrowed during school hours (a decision made by the school management).

With regard to the background characteristics of the children (i.e., gender, age, parental educational level, and reading climate at home), it was found that the effect of the school library on the students' reading attitude did not depend on these factors. On the other hand, for the reading frequency of the six types of reading materials taken together, we did find that at the experimental school, the reading frequency of older children – who generally read less often than younger children (Huysmans, 2013) – increased more over time than that of younger children, whereas the opposite was true for the control school. Moreover, we also found several main effects of background factors on both the students' reading attitude and reading behavior. In line with previous research (e.g., Clark & Foster, 2005; Meelissen et al., 2012; Witte & van Nood, 2012), younger children had a more positive reading attitude and girls scored higher on the hedonic aspect than boys. In general, boys more often preferred reading about sports, technology, and war, whereas topics typically preferred by girls were love, fairy tales, school, animals, and friendship. Girls reported reading verses and poems more often than boys, whereas the opposite was true for comics. Magazines were read more frequently by older students than by younger students. In correspondence with previous findings (e.g., Kraaykamp, 2002, 2003; Mol & Bus, 2011a; Notten, 2011; van Steensel, 2006; Verboord, 2003), the students' reading climate at home was found to be a predictor of both their reading attitude and reading behavior, with children from families with a more reader-friendly climate reporting more reading and a more positive attitude.

EFFECTS ON READING AND LANGUAGE SKILLS

In agreement with national research results for children with a migration background (e.g., Gijsberts & Iedema, 2012), the students of both the experimental school and the control school scored fairly low on nationally standardized tests assessing their reading and language skills. Compared to a national reference group, they scored substantially below average on the *vocabulary* and *reading comprehension* measurements, and just below to substantially below average on the *spelling* tests. We found a positive effect of the school library on the students' vocabulary size, with a higher increase in vocabulary scores over time for the experimental school students than for the control school students. However, no effects of the school library were found with respect to the students' reading comprehension level and spelling skills. This may be related to the earlier finding that the school library did not affect the students' reading frequency. The positive effect on vocabulary scores may be a result of the reading promotion lessons that were part of the school library program, incorporating components that are suggested to be positively related to vocabulary size, such as reading aloud to the children and creating a word web together (Broekhof, 2011b; Vernooij, 2012). Moreover, when teaching world orientation subjects in class (e.g., history and geography), teachers of the experimental school – having access to the large collection of the school library – more often read a book aloud than control school teachers. Perhaps it may also be argued that free reading in class, which happened at both schools, was more strongly related with the students' vocabulary size than with their reading comprehension level and spelling skills, as only their vocabulary scores increased over time regardless of the school – although the effect was significantly stronger at the experimental school where students spent slightly more time on free reading and selected books from a broader collection assisted by a reading and media coach.

The results also showed that as the students progressed through primary school, their performance in reading comprehension and spelling declined compared to the national reference group. Besides an effect of age on the students' spelling scores, the language they spoke with their parents' also had an effect: Students speaking Dutch at home, or Dutch together with another language, performed better on spelling than students only speaking in a non-Dutch language with their parents (cf. Herweijer, 2009; van Weerden & Hemker, 2012). Furthermore, the results showed that the reading comprehension skills of experimental school students growing up in lower educated families improved more over time than those of children from higher educated parents, whereas the opposite was found for control school students, suggesting that a school library may have the ability to counter a so-called Matthew effect (Cunningham & Stanovich, 1998), with increasing differences between disadvantaged and advantaged children over time. The effects of the school library on the students' vocabulary level and spelling skills, though, did not differ for categories of parental educational level, nor for categories of gender, age, reading climate at home, and language spoken with parents.



RELATIONSHIPS BETWEEN READING ATTITUDE, READING BEHAVIOR, AND READING AND LANGUAGE SKILLS

Other research has shown that the central outcome variables discussed in our two previous studies are reciprocally related, suggesting an upward spiral of causality: Children who hold more positive attitudes toward reading will tend to read more, which translates to a higher reading and language ability (e.g., Kortlever & Lemmens, 2012; Mol & Bus, 2011a, 2011b; Mullis et al., 2012; Stalpers, 2005). However, in agreement with previous studies among migrant students (e.g., Gijsberts & Iedema, 2012; Netten, 2014), the non-Western migrant students involved in our study reported a quite positive reading attitude and read fairly often, whereas they attained quite low scores on tests assessing their reading and language skills. This implies that relationships between these factors may be more complicated among children from non-Western migrant families and that an upward (or downward) spiral may not be present (cf. van Elsäcker-Bok, 2002). In our final empirical study, we examined whether there were reciprocal relationships between the students' reading attitude, reading behavior, and reading and language proficiency.

Our results showed that the different measures of reading attitude were positively related to one another, with, for instance, a strong correlation between the hedonic and utilitarian dimension. This also applies to the different measures of reading behavior, with students reading more frequently also being more likely to read more minutes a day. Of the six types of reading materials, reading storybooks showed the strongest relationship with reading duration. The relationships between the different reading and language skills were also significant, with higher spelling test scores related to higher scores on vocabulary and reading comprehension tests. The students' vocabulary size and reading comprehension level showed the strongest correlation.

In line with previous research (e.g., Broeder, Stokmans, & van Wijk, 2011; Broeder & Stokmans, 2013; Melnick, Henk, & Marinak, 2009; Stalpers, 2005; van Elsäcker-Bok, 2002) the analyses demonstrated a positive relationship between the students' self-reported *reading behavior and reading attitude*: Students who thought reading is fun and important were more likely to read more frequently and to spend more leisure time on reading. This was especially true for the reading frequency of storybooks. These relationships remained significant after controlling for background characteristics (i.e., gender, age, parental educational level, and reading climate at home). As was found in other studies (Broeder et al., 2011; Broeder & Stokmans, 2013; Stalpers, 2005; Stokmans, 2006, 2009), the hedonic component of reading attitude was more important for the students' reading behavior (and vice versa) than was the utilitarian aspect.

Our results indicate that the relationships between the students' reading and language skills with their reading attitude and reading behavior are far less pronounced than the one between the children's reading behavior and attitude (cf. Aarnoutse & van Leeuwe, 1998; Baker & Wigfield, 1999; Stokmans, 2006; van Elsäcker-Bok, 2002). With regard to the students' *reading attitude and reading and language skills*, we found that children with a higher reading comprehension and spelling level

were more likely to consider reading a fun activity. However, after controlling for background factors most results were no longer significant, implying that these relationships could be explained by background variables related to the outcome factors. Furthermore, vocabulary scores were not found to be related to the students' reading attitude. Thus, a high or low language and reading ability did not necessarily imply a particularly positive or negative attitude among the students. In line with this, in her dissertation van Elsäcker-Bok (2002, p. 197) indicated that "there is evidence that the relations between reading motivation and reading achievement are not consistent across cultural groups and that these relations are weaker for [ethnic] minority students than for mainstream students".

Our findings with respect to the relationship between the students' *reading behavior and reading and language skills* did not correspond with a bulk of research showing a clear positive relationship between these factors (e.g., Mol & Bus, 2011a, 2011b; Mullis et al., 2007; National Endowment for the Arts, 2007), although they were more in agreement with results reported by van Elsäcker-Bok (2002) and those of several other studies (Aarnoutse & van Leeuwe, 1998; Carver & Leibert, 1995; Otter, 1993; Taylor, Frye, & Maruyama, 1990). It was found that students with a larger vocabulary, and higher reading comprehension and spelling scores reported a higher reading frequency and duration, but most relationships were not statistically significant. We did find that better spellers tended to spend more time on leisure reading, and that students who read more minutes had larger vocabularies, although these significant relationships did not hold after taking into account several background factors. All in all, it was hard to explain variance in the students' language and reading proficiency.

Several explanations may be put forward. For instance, in interpreting the findings, one should bear in mind that reading ability has a substantial genetic component (Davis et al., 2014), which implies that a relatively small proportion of the total variance in reading proficiency is accounted for by environmental factors. Furthermore, as indicated by van Elsäcker-Bok (2002), leisure reading may not be as effective for ethnic minority students, given that it may be hard to improve one's reading comprehension skills by just reading individually at home without extra help when a child's language proficiency is below a certain level. Poor readers and children with smaller vocabularies are more likely to have problems with learning word spelling and learning vocabulary from, and understanding, age-appropriate texts (Mol & Bus, 2011b). In addition, the children's leisure reading environment at home may not have been ideal, for instance in terms of availability of a place where a child can completely engage in reading without disturbance, and the degree in which they read books matching their reading proficiency level (cf. Broeder et al., 2011; Otter, 1993; van Elsäcker-Bok, 2002).

LIMITATIONS

Several limitations should be considered when interpreting the results of this study. First of all, the number of participants was quite limited and we had to control for differences between the



experimental and control school as they were not completely similar regarding the students' background characteristics. More and/or stronger effects may have been found if a larger number of students could have been included. All students included in our sample had a non-Western background and due to the limited number of Western migrant students attending the two schools and the limited number of native Dutch students attending the experimental school, it was not possible to compare the non-Western migrant students with native Dutch and Western migrant students. It should also be kept in mind that the sample consisted of students whose parents had a very low educational level on average, and some ethnic backgrounds were overrepresented (e.g., Moroccan-Dutch) or underrepresented (e.g., Turkish-Dutch) compared to the total migrant population in the Netherlands. Because of the composition of the sample, it was not possible to compare students from different non-Western backgrounds. Furthermore, as in many Dutch schools, books were also present at the control school, although its collection was far smaller and less up-to-date and the school did not participate in a school library program (see Appendices A and C). Perhaps more effects of the school library could be discerned if there had been a larger difference in the presence of reading materials between the two schools.

Furthermore, self-reports were used in the present study and we cannot be sure that the students' answers completely covered their actual reading behavior, attitude, and reading climate at home, nor that every parent filled in the questionnaire with a complete understanding, despite help offered to them (see Appendix B). For the students a bias may have occurred due to factors such as social desirability and insufficient understanding. However, this holds true for both schools and we have no reason to assume this applies more strongly to one of both schools. The reliability of the scales was also satisfactory, and literature on survey research with children suggests that generally from 7 years onward, children can complete a self-report (de Leeuw, 2011). The students' scores on both reading frequency and reading attitude were quite high, leaving not much room for improvement (*ceiling effect*), although they were in line with national statistics (Broekhof & Broek, 2013; Witte & van Nood, 2012). Furthermore, at the experimental school most student questionnaires were filled in online, whereas at the control school most surveys were completed on paper, although the students of both schools completed the questionnaire at school under the guidance of a teacher, librarian, and/or researcher.

Lastly, it should be kept in mind that the school library program was not implemented in the most optimal form in the experimental school. The library books borrowed during school hours were not allowed to be taken home, while providing reading materials that can be taken home is an important aspect of the national the *Library at School* program (Bron & Langendonk, 2015). After all, access to reading materials is suggested to be of importance for more reading and a more positive reading attitude (Krashen, 2004b; Krashen et al., 2012; Lindsay, 2010). This is also supported by our own data: Students who reported having more books at home read more frequently, spent more time reading, and liked to read about a broader variety of topics than

students with fewer books at home, and they enjoyed reading more as well. Also, the finding that the experimental school students had less books at home on average than the control school students makes it even more plausible that taking library books home could have resulted in stronger effects of the school library in the experimental group.

SCIENTIFIC AND SOCIETAL CONTRIBUTION

This research was the first to examine the effects of an integrated library facility in a Dutch primary school on the reading attitude, reading behavior, and reading and language skills in students with a non-Western migrant background in particular, hereby contributing to research in the field of library and information sciences. The results showed positive effects of the school library concept in terms of an increase in the students' vocabulary size and the degree in which they considered reading useful. This suggests that an integrated library facility can contribute to narrow the achievement gap between advantaged and disadvantaged students. No effects, though, were found with respect to the students' hedonic reading attitude (reading enjoyment), reading behavior, and reading comprehension level and spelling skills, in contrast to other studies (e.g., Boelens, 2010; Clark, 2010; Geurtsen, 2008; Hay, 2003; Krashen et al., 2012; Lindsay, 2010; Lonsdale, 2003; Nielen, 2016; Softlink, 2012; Williams et al., 2013). Our findings imply that effects found for students in general may not necessarily apply to non-Western migrant students in the Dutch context, which one should take into account in policies and practices targeted at this group. The rather modest effects found in this research could also be related to limitations, including shortcomings in the implementation of the school library program, and to the less evident relationships between the students' reading attitude and reading behavior with their language and reading proficiency, calling for further research and modifications of the intervention. Despite its limitations and complex design, this research did show some encouraging effects, although, with the absence of several other effects, it also demonstrates that there is room for improvement in implementing a school library program.

Furthermore, we have contributed to the fields of reading research, educational research, and (behaviorist, developmental, and experimental) psychology, by investigating the relationships between the factors reading promotion through a school library aims to improve, that is, reading attitude, reading behavior, and reading and language skills, among non-Western migrant students in particular. Our results indicate that the relationships between these students' reading attitude and behavior on the one hand, with their vocabulary size, reading comprehension level, and spelling skills on the other hand are far less evident than often indicated in the literature. Our research has made clear that what holds true for the general population of primary school students does not necessarily hold true for students with a migrant background (cf. van Elsäcker-Bok, 2002). This obviously implies that policy measures aimed at this group are well-advised not to be based solely on general student population studies.



Moreover, following earlier sociological studies (e.g., De Graaf, De Graaf, & Kraaykamp, 2000; Kraaykamp, 2002, 2003; Mol & Bus, 2011a, 2011b; Notten, 2011; van Steensel, 2006; Verboord, 2003), our study also underlines the importance of a strong reading climate at home for students from migrant families. From the literature and our research it appears that the availability of reading materials at home is important as well as parental behavior. Parents can stimulate their children more or less unconsciously, such as by reading themselves, and they can deliberately encourage their children's reading by, for in example, reading books aloud to children, recommending and discussing books, and accompanying children to the library. This calls for further action to enhance the students' home environment where necessary.

Overall, this research project has contributed to the research literature and it has provided implications for future research and practice (as outlined in the next sections), which can be used to implement more effective reading promotion efforts.

FUTURE RESEARCH

In order to get a better understanding of the effects of reading promotion through a school library, for migrant students and students in general, future research should focus on the effects of an optimally implemented school library program. In line with this, future research could examine which aspects of school library programs influence the reading attitude, reading behavior, and reading and language skills. Reviews of school library impact studies conducted abroad have identified library characteristics that contribute to higher student achievement, such as large and up-to-date collections, the presence of qualified, full-time school librarians, collaboration with teaching colleagues, and flexible library access (Kachel, 2013; Lonsdale, 2003; Scholastic, 2008; Williams & Wavell, 2001; Williams et al., 2013). Hitherto, there is a lack of clarity as to the "success factors" in the Dutch context. Future research could also involve larger and more comparable samples for experimental and control schools to enhance power. Moreover, it would be advisable to include native students in the sample as well to compare the effectiveness of a school library for non-Western migrant children and native Dutch children. Future research could also compare migrant students from different ethnic backgrounds.

The finding that there was hardly any relationship between leisure reading and the students' language and reading skills also calls for more research. Besides including a larger number of participants to increase statistical power, other measurement instruments could be used, such as a print exposure checklist measuring familiarity with book titles and authors or magazines, which are likely to be less biased (Cunningham & Stanovich, 1998; Mol & Bus, 2011b). It is possible that reading frequency assessed through single items shows lower predictive power given that they are more likely to be positively skewed compared to a print exposure checklist (cf. Mol & Bus, 2011b). In constructing such a checklist, though, one should consider that preferences for leisure time reading materials may vary across ethnic groups and socioeconomic status groups (Mol & Bus, 2011b).

Moreover, it would be interesting to examine the leisure reading of non-Western migrant students in more depth. For instance, what reading materials do they read? Under what circumstances do they read at home? Do they need a threshold level of reading and language ability in order to benefit from independent reading? What kind of reading materials – including digital ones – would be most beneficial to them? To gain more insight into the relationships between reading for pleasure with language and reading skills and reading attitude, these relationships could also be explored in a more controlled setting (cf. Elley & Mangubhai, 1983), for instance at school or the (school) library, adjusting the reading materials and conditions more to the students' needs.

PRACTICAL IMPLICATIONS

First, this research underlines the importance of implementing a strong school library program for students with a non-Western background. It is of utmost importance that children can bring the library books home in order to increase their access to (appropriate) reading materials. To meet the preferences of all age groups and both boys and girls, school libraries need to provide a wide range of reading materials covering a wide variety of topics. Ideally, students are provided with many opportunities to borrow books in the school library, preferably under the guidance of a qualified reading and media consultant. Also, our findings recognize enhancing the students' reading attitude as an important element of the national Library at School program, given the clear positive relationship we found between the students' reading behavior and reading attitude, particularly its hedonic component. As we only found a significant effect of the school library on the utilitarian component, ways should be found to also significantly increase the degree in which students think reading is fun. Our results seem to indicate that reading promotion activities provided by the reading and media coach contribute to a larger vocabulary size, but such activities are also intended to stimulate a positive reading attitude and more reading. Furthermore, research conducted outside the Netherlands points out the importance of the presence of qualified full time school library staff who collaborate with teachers (e.g., Kachel, 2013; Scholastic, 2008; Williams et al., 2013). With their skills and knowledge, and when being directed sufficient hours, Dutch reading media consultants are in the position to advise teachers and support the schools in optimally implementing the library program.

Furthermore, our findings suggest that independent leisure reading as assessed in our study is not sufficient to significantly improve the reading and language skills in non-Western migrant children. One should keep mind that these students may need a certain threshold vocabulary size and reading comprehension level in order for reading for pleasure to be effective. Extra attention for (the most) disadvantaged students in education, incorporating effective practices, is and remains therefore important, for instance through *insertion classes* ("schakelklassen"). Additionally, attention should be paid to the 'quality' of the children's leisure reading experiences. It is of importance that children can fully concentrate on reading and that they read materials that are compatible with their interests and abilities. Bilingual students and low-ability readers



in particular may benefit from the provision of illustrations in support of the text, while making sure the level is challenging enough. One should consider that these students may need more contextual and teacher support than (monolingual) native Dutch students (Brabantse Netwerk Bibliotheek, 2013; Otter, 1993; van Elsäcker-Bok, 2002).

Finally, our research emphasizes the importance of a strong reading climate at home. Children with a non-Western background are more likely to grow up in less reader-friendly families than native Dutch children. Migrant children are less likely to be read to by their parents, have fewer reading materials at home, and their parents are less inclined to set an example by reading themselves (de Vries, 2007; Hermans, 2002; Scheele, 2010; van Steensel, 2006). Our study confirmed that the migrant students' reading climate at home was not that favorable and we showed that this climate is an important predictor of both the students' reading attitude and reading behavior: Children from families with a more reader-friendly climate reported more leisure reading and a more positive attitude. This stresses the importance of parents as partners for schools and libraries when it comes to reading promotion. Parents may influence their children either by setting an example or by actively stimulating children's reading habits, also referred to as *imitation* and *instruction* (Bandura & Walters, 1963; De Graaf et al., 2000; Kraaykamp, 2002; Leseman & de Jong, 1998). Opportunities should be taken to strengthen the students' reading climate at home and it is advisable to structurally incorporate this element in the school library program. Apart from providing families with books that can be read at home, their reading climate may be enhanced in other ways. For instance, in collaboration with the schools, libraries can inform migrant parents – in Dutch or another language – about the importance of a strong reading climate at home and advise them about ways to achieve this. One could also look for more personal or intensive methods to stimulate parental reading behavior and parental involvement with their child's reading, such as letting parents actively participate in reading/book projects at school. Here, one has to keep in mind that differences exist between migrant group (e.g., Bakker, 2011; Scheele, 2010) and that (providing a rich language environment) using a non-Dutch language at home may be preferred over (poor use of) the Dutch language. Languages share a common underlying proficiency that can be transferred to a second language once acquired in one language (cf. Cummins, 1979, 2000). Furthermore, it has been suggested that parents with a non-Western migrant background often feel less responsible for actively stimulating their child's cognitive development and that there often is a barrier between them and the school (Beks & de Natris, 2008). Increased efforts may be needed for schools and libraries to reach and work together with these parents to inform and support them.

CONCLUSIONS

The present research is, to our best knowledge, the first to provide more insight into the effectiveness of a school library for non-Western migrant children in the Dutch context, leading

to implications for further research and practice. Overall, there was a positive effect of the school library on the students' reading attitude and vocabulary level. Students attending the school with the library facility considered reading more useful and attained higher vocabulary test scores over time than the control school students. No effects were found with respect to their reading behavior and the degree in which they think reading is fun, nor with regard to their reading comprehension level and spelling skills. The children's reading attitude was found to be positively related to their reading behavior: Students who liked to read and/or considered reading important tended to read more frequently in their leisure time and were more likely to spend more time reading. The relationships between the students' reading attitude and behavior on the one hand with their vocabulary size, reading comprehension level, and spelling skills on the other, however, were far less evident. Of the background characteristics studied, especially the students' reading climate at home proved to be an important factor for their reading attitude and behavior. A higher impact of the school library may be found in research involving, for instance, a greater difference in treatment between the control and experimental group, and an optimal implementation of the school library program. By providing wide access to appropriate reading materials that can also be taken home, as well as by providing stimulating reading promotion activities, and supporting parents and schools, school libraries may (further) enhance the reading attitude, reading behavior, and language and reading skills of non-Western migrant students and the relationships between these factors.

APPENDICES





APPENDIX A

CHILDREN'S LIBRARY OOSTERWEI

Central in the empirical part of the research project is the children's library in Oosterwei, established in a primary school (i.e., the experimental school) by the public library of Gouda in September 2011. The implementation of the school library Oosterwei is part of the nationwide program *the Library at School* ("de Bibliotheek op School"), which comprises a structural cooperation between public libraries and schools directed at promoting reading enjoyment, stimulating reading and language development, and improving information and media skills of primary school students in the Netherlands.¹ Although it is a national policy program, it is not a standard formula. How the program is given shape depends on the local situation, wishes, and needs (Bron & Langendonk, 2015; Huysmans, Kleijnen, Broekhof, & van Dalen, 2013). Therefore, in the remaining part of this Appendix, the children's library Oosterwei will be described in more detail, based on information derived from interviews with the school librarian (i.e., the so-called reading and media coach), the monitor questionnaire completed by her, available documents provided by the reading and media coach, and observations in the school library by the researcher.

COLLECTION

The children's library Oosterwei is directed at youth (0 to 14 years of age), their parents, and teachers. The library, which covers 130m², provides a wide variety of Dutch reading materials such as storybooks, comic books, picture books, and non-fiction books, with a total collection of approximately 5,400 materials. The collection, which is quite large for a Dutch school library, mainly consists of paper-based materials, but there is also a small number of audio books and DVDs available. Books for all age groups and reading levels are present: There is a corner for babies and toddlers, a corner for emergent readers, and a corner for more advanced readers. For children experiencing more difficulty reading than their peers, there is a so-called *easy reading square* ("Makkelijk Lezen Plein" [MLP]), clearly separated from the other materials, that consists of shelves with both storybooks and non-fiction books. The sentences in these books are shorter and easier compared to regular books. The font also differs sometimes (i.e., it is adjusted to children with dyslexia) and the "easy reading books" are often accompanied by a CD, making it possible for children to listen to the text and read the book at the same time. The themes covered by the library's collection are very diverse and include topics such as animals, school, history, sports, holidays, humor, love, and friendship. Every year, some books are deselected and other books are purchased. In the library, the books are sorted on reading level, type of reading material, and topic. Table 1 presents an overview of the library's collection.

TABLE 1 OVERVIEW OF THE SCHOOL LIBRARY COLLECTION (ROUNDED NUMBER OF MATERIALS)^a

Type of book	Number of materials
Books for toddlers	330
Picture books	600
Storybooks	
Books for emergent readers	450
A-level books for children aged 7-8 years	490
A-level books for reading aloud	140
B-level books for children aged 9-12 years	930
C-level books for children aged 13-15 years	260
Informative books (non-fiction)	
A1 labeled books for children aged 4-8 years	250
J labeled books for children > 8 years	1120
Easy reading books (MLP)	
Storybooks	190
Non-fiction books	90
Books about Christmas and Sinterklaas	200
Comics	210
Audio books (incl. MLP)	90
DVDs (incl. MLP and non-fiction books)	110

^a All books are in Dutch.

READING AND MEDIA COACH

The reading and media coach, employed by Gouda public library, was responsible for the functioning of the school library. This person holds a bachelor's degree in education and had experience as a school teacher. She had also finished a course for reading consultants as well as a reading coordinator course and she was knowledgeable about children's literature. The reading and media coach contributed at both the content level and the executive level to plans, services, and products of the library with respect to reading promotion, language development, and media literacy/information skills. Every year, the reading and media coach devised a general plan in which the programs and activities of the children's library and the librarian were documented, taking budgetary resources into account. The school was, by and large, aware of this plan and teachers were entitled to ask for certain changes in the plan. On average, the reading and media coach spent 24 hours per week working for the school library, of which about 10 to 12 hours were reserved for the school in which the library has been established. Her main tasks for this school included:



- Guiding/mentoring the students during library visits and helping them find appropriate books.
- Regularly providing the kindergarten classes with theme collections.
- Developing, preparing, and implementing reading promotion programs for the students.
- Interacting with the school teachers (e.g., she advised teachers during the library visits about books they could use in class and she sometimes attended teacher team meetings).

The remaining hours per week were devoted to other activities:

- Taking care of the coordination, set-up, and collection of the library Oosterwei.
- Working at the children's library's front office after school hours.
- Organizing and implementing reading projects for children attending the play group and child care center that were also established in the multifunctional accommodation.
- Attending meetings with colleagues.
- Talking with employees of the infant welfare center about a reading project aimed at babies/young children and their parents (called *BookStart*), and providing materials for this project.
- Developing and executing after-school programs and activities related to reading and language development in which children could participate, regardless of the school they attended.
- Performing other tasks as a librarian that did not necessarily involve children, including guiding library visits at other library locations in Gouda, and following and giving training courses.

LIBRARY VISITS: BOOK LENDING, READING LOGS, AND READING PROMOTION LESSONS

BOOK LENDING

Every three weeks, children attending the school in which the library is located visited the library with their classmates and teacher at a predetermined time to return and borrow books during school hours. In general, the students started these library visits with returning the books they borrowed last time. After that, the reading and media coach shortly informed the students in an interactive way about the procedure of the library visits and, if applicable, she gave them some tips on new materials. Next, the students themselves went searching for materials they wanted to read under the guidance of the reading and media coach who helped the children find a book that matched their interests and reading ability level. She also helped the students locate the books they were looking for. The children could use a catalogue computer to search for books themselves, which gave them information about the current availability of books, where they could find a particular book in the shelves, and which books were related to the ones they had read before. It was also possible to request books on the computer, although materials that were not part of the collection of the children's library had to be directly requested at the reading and media coach,

which often happened when children had read a book that was part of a series. With their personal card, which was kept in the library by the reading and media coach, the students could borrow the books they had chosen, making use of the self-service counters. The books were taken to the classrooms where they were read during free reading time.

Children were allowed to borrow all kinds of materials during the library visits, but this mostly depended on the wishes of the teachers. Often, children borrowed two books: one storybook and one informative book. Depending on the teacher, the books were kept by the children themselves in class or (partly) handed in to the teacher. Although it was certainly not an obligation imposed by the library, the school had chosen to keep the borrowed books in the classroom; the reading materials borrowed during school hours were read in class and were rarely taken home. Students who had finished all their books – which did not happen very often – could swap borrowed materials with classmates. As of the school year 2013/14, it was possible for all classes to visit the library on their own – without the guidance and advices of the reading and media coach – to return and borrow books, in addition to the scheduled class library visits. During the regular class library visits, children alternately participated in a reading promotion lesson and filled out a reading log.

READING LOGS

With a personal account and password, the students had access to their own reading logs on the library's computer, in which they gave their opinion about the books they had read. The children were asked to rate the books and to answer a couple of questions, such as what they liked most about the books and which illustration they liked best. The reading logs, which were linked to the students' personal cards, were initially only available to the children themselves; their teachers had access to the reading logs as of the school year 2013/14.

READING PROMOTION LESSONS

Every six weeks, the library visits were preceded or followed by a one-hour reading promotion lesson given by the reading and media coach at the school library. The coach was responsible for the development of these lessons and she ascertained that the lessons were appropriate for the age and ability level of the students and also fitted in with the theme that was covered in the classrooms during that period. These themes were usually set by the school right before or after the summer break and covered varied topics, such as sports, super heroes, and the royal family. Where possible, attention was paid to (themes of) national reading promotional projects. Depending on the theme, the reading and media coach would use a purchased ready-made program (designed by Dutch regional library service providers such as ProBiblio and Cubiss), or think of a lesson herself, drawing upon her own expertise, the Internet, and materials stored in the library's storage. The ready-made programs were not as widely available for the older children as they were for the younger students, and, according to the reading and media coach, these programs often asked for certain changes to make them more suitable

to the students of this particular school. Additionally, these programs were often based on a library visit that is followed by a number of weeks working on processing assignments in the classrooms. As this approach was not possible in the experimental school in terms of time, the reading and media coach gave the programs her own twist by adjusting them in such a manner that the program could be covered in a one-hour lesson, while making sure the content stayed more or less the same. She tried to ascertain that the reading promotion lessons were both fun and educational.

The reading promotion lessons had several recurring components. Usually, the reading and media coach started with an introduction to the theme, making the students familiar with the subject and introducing theme-related words that might be unfamiliar to children. During this part, the children often sat around in a circle and were actively involved in making a so-called word web or word spider (a mind map) around the theme. The librarian and the students created this word web together: The reading and media coach wrote the words that they came up with on a flip-over or digital blackboard, i.e., “digiboard”, and she elaborated on these words together with the students. The coach had often spread out various objects that were related to the theme and served in support of the word web (i.e., visualization of discussed words). These materials were also sometimes used for a small “act” of some students (e.g., two children wearing a crown and a cape pretending to be a king and queen during a lesson about the royal family). Another central part of the lessons was that the reading and media coach read a book aloud to the students which fitted the theme and was age-appropriate. This also happened in an interactive manner. Furthermore, the digiboard was used during certain lessons to show educational videos on the topic being covered. The final part of the lessons was allocated for working individually or in small groups on so-called processing assignments. Students actively performed tasks that were related to the theme, such as drawing a picture, participating in a quiz, creating a poster, playing with books, playing a word game, searching for information in books and on the Internet, and writing a short article. Although the children’s library did not devote separate lessons to media literacy/information skills, the reading and media coach did pay attention to these skills during the regular reading promotion lessons when applicable. This means, for example, that she advised children about consulting reliable websites and using appropriate search engines and search terms.

THE SCHOOL LIBRARY OVER THE YEARS

According to the reading and media coach, the collection and activities of the school library remained unchanged over the school years 2011/12 - 2013/14. In 2013/14, though, the number of library visits increased due to the possibility of borrowing books without the guidance of the coach, and teachers more often used the collection and other facilities of the school library.

CORE OBJECTIVES FOR PRIMARY EDUCATION

The services provided by the school library under analysis fitted in with the core objectives for

TABLE 2 CORE OBJECTIVES PRIMARY EDUCATION FOR DUTCH LANGUAGE

Core objectives	Description
1	The students learn to acquire information from spoken language. At the same time, they learn to reproduce this information – orally or in writing – in a structured way.
2	The students learn to express themselves in a meaningful and engaging manner when giving or requesting information, reporting, giving explanations, instructing, and participating in discussions.
3	The students learn to assess information in discussions and in conversations that are informative or opinion forming in nature and learn to respond with arguments.
4	The students learn to retrieve information from informative and instructive texts, including diagrams, tables, and digital sources.
5	The students learn to write meaningful and attractive texts with different functions, including: informative, instructive, convincing, or enjoyable.
6	The students learn to structure information and opinions when reading educational, study-oriented, and other instructive texts, as well as systematically structured sources, including digital ones.
7	The students learn to compare and assess information and opinions in different textual forms.
8	The students learn to structure information and opinions when writing a letter, a report, a form, or a paper. While doing so, they pay attention to syntax, correct spelling, writing legibly, type page, as well as, in some cases, images and colour.
9	The students derive pleasure from reading and writing of stories, poems, and informative texts intended for them.
10	The students learn to recognise, express, use, and assess strategies in the objectives for ‘oral language education’ and ‘written language education’.
11	The students learn a number of linguistic principles and rules. Within a sentence, they are able to distinguish between subject, verbal predicate, and parts of a predicate. The pupils know the rules for spelling of verbs, the rules for spelling of other words besides verbs, and the rules for the use of punctuation marks.
12	The students acquire an adequate vocabulary and strategies for the understanding of words as yet unknown to them. ‘Vocabulary’ includes terms that allow pupils to think and talk about language.

Source: http://www.slo.nl/primair/kerndoelen/Kerndoelen_English_version.doc

primary education in the Netherlands. These consecutively numbered 58 objectives broadly indicate what primary schools should at least offer to their students in seven learning areas (Dutch language, English language, Frisian language [in the province of Fryslân only], arithmetic/mathematics, exploratory social studies, art education, and physical education). The objectives describe the desired results of a learning process, not the way in which these should be achieved, giving schools the opportunity to give shape to their curriculum themselves. However, to support the operationalization and implementation of the core objectives, all of them have been described in more detail with regard to contents and activities (Ministerie van Onderwijs, Cultuur en Wetenschap, 2006).²

The school library could mainly be associated with the core objectives related to the learning area Dutch language (see Table 2). For instance, to achieve objective 9, the library provided the children with a broad collection, with the reading and media coach guiding the children during



their book selection process. Reading aloud to the children, introducing books, and paying attention to national reading promotional projects were also activities that were in line with objective 9. By reading aloud to the children in an interactive manner, the reading and media coach also worked on core objective 1 and 2, and providing reading materials and engaging in activities, such as reading aloud to the children, creating a word web together, and showing videos could contribute to objective 12. Core objective 4 emerged, for example, when students systematically searched for information (in paper books and online) under the guidance of the reading and media coach, as well as during the process of book borrowing when students had to search for materials in the digital catalogue and had to apply or develop their knowledge about alphabetical order, differences between reading materials (e.g., fiction versus non-fiction), and book genre icons. All in all, in implementing the school library program, the reading and media coach made sure that the services and activities provided by the library covered one or more core objectives.

LIBRARY AFTER SCHOOL HOURS

After school hours, the library Oosterwei served as a public children's library for all young citizens of Gouda. A couple of afternoons a week, any child (accompanied by a parent or not) was welcome to visit the library and borrow books with a free youth library card. The children's library was also aimed at parents living in Gouda, especially at those of young children. The library had, for instance, a broad collection of books that parents could read to their child. Moreover, with a voucher from the infant welfare center, parents could obtain a little suitcase filled with reading materials suitable for babies and young children for free, called "BoekStartkoffertje". Apart from lending books, the library organized fun activities related to reading and language after school hours in which children living in Gouda could participate in exchange for a small contribution, such as drawing comics.

Furthermore, two afternoons a week, children attending 4th, 5th, and 6th grade and who were in the possession of a library membership card, could work on computers in the so-called Skoolzone on their school assignments/projects, regardless of the school they attended. The computers were connected to the Internet and a printer, and the students had access to certain programs that were related to the subjects taught in class (e.g., exercises with regard to vocabulary expansion). With the Skoolzone, the library intended to create a space for children who did not have any or only few possibilities to work on their school assignments at home. In the Skoolzone, guidance from library staff was available; the reading and media coach herself or another librarian assisted the children with, for instance, homework, presentations, the planning of their tasks, and the use of certain computer programs (e.g., text processing and presentation software). During the Skoolzone hours, the children were stimulated by the staff to consult the collection of the library, especially the non-fiction books. Before the children started using the computer, they were stimulated to create

a mind map about the subject of their assignment and to search for books that contained the kind of information they needed. After that, they could search for complementary information and pictures on the Internet.

Notes

1. See www.debibliotheekopschool.nl
2. See for a detailed overview: www.tule.slo.nl



APPENDIX B

METHOD

DESIGN

A quasi-experimental longitudinal study was performed, involving non-Western migrant students (grades 2 to 6) of two Dutch primary schools: one school with an integrated library facility (i.e., the experimental school) and one school without such a school library (i.e., the control school). Random assignment of respondents was not possible because of the “real life” nature of the design. Data were gathered through questionnaires, administered once a year, and standardized tests, administered once or twice a year. The data were collected over three successive school years: 2011/2012, 2012/2013, and 2013/2014. The students who attended grades 2 to 6 in the first school year were also followed during the second and third school year (excluding those who moved to secondary education or left school for other reasons), as well as students entering second grade and new students (grades 2 to 6) who entered school. For instance, of the 33 experimental school students who completed the survey in the first school year (2011/12), 23 completed the questionnaire again in the second year (2012/13), and 13 of these students were surveyed for the third year (2013/14) as well, whereas 11 experimental school students completed a questionnaire for the first time in 2013/14 (see Table 1).

PARTICIPANTS AND PROCEDURE

As the children’s library Oosterwei in Gouda is central in the present research, the school in which this library is established was asked to participate in the project as the experimental school. To reinforce the design of the research, a control school without a school library, also attended by a considerable number of migrant students, was searched for and found in an adjacent neighborhood in Gouda. The principals of both schools agreed to cooperate and the teachers and

TABLE 1 NUMBER OF STUDENTS SURVEYED AND TESTED FOR THE FIRST, SECOND, AND THIRD YEAR, BY SCHOOL AND SCHOOL YEAR

	Experimental school			Control school		
	2011/2012	2012/2013	2013/2014	2011/2012	2012/2013	2013/2014
Surveyed for the:						
first year	33	28	11	42	14	12
second year	-	23	20	-	30	13
third year	-	-	13	-	-	22
Tested for the:						
first year	25	26	10	40	13	15
second year	-	22	18	-	30	12
third year	-	-	12	-	-	19

parents were informed about the research. A description of the two schools and the school library concept at the experimental school can be found in Appendices C and A, respectively.

The students attending grades 2 to 6 of both schools were central in our research project, but their teachers, parents, and the reading media and coach employed by the public library participated in the study as well. In the social sciences, children are increasingly surveyed, as researchers are convinced that information about behaviors, attitudes, and perspectives of children should be collected from the children themselves. For these topics, they are considered the best informants (Borgers, Hox, & Sikkell 2004; de Leeuw 2011), and according to de Leeuw (2011) children can complete a self-report from 7 years onwards. Therefore, questionnaires for students were deliberately used in this research to gain insight into the students’ reading attitude and reading behavior. Furthermore, it is common to use standardized tests to assess the language and reading skills of students. The results of the student questionnaires and tests were used to examine the effects of the school library on the students’ reading attitude, behavior, and language and reading skills, as well as to examine the relationships between these factors. Parents were also approached to complete a questionnaire as we expected them to have more accurate knowledge about certain background characteristics than their children, such as the ethnic background of the children and the educational level of the parents. The information provided by the parents was taken into account in our analyses and it was used to gain insight into the sample studied. Furthermore, the teachers and principals were involved in the study to give more insight into differences and similarities between the experimental school and the control school with regard to reading promotion and language and reading education (see Appendix C). Finally, the reading and media coach has provided us with information about the school library concept studied in our research project (see Appendix A). In the next sections, we will discuss the different groups of participants involved and the procedures in more depth. After that, the measurement instruments and variables will be described.

STUDENTS

During all three school years, a student questionnaire was administered to the students attending grades 2 to 6 of the experimental or control school, consisting of a national survey on school libraries called the *Monitor the Library at School*, complemented by an additional questionnaire in the last two school years. The surveys included questions about the students’ reading attitude, reading behavior, and reading climate at home. In 2012/13 and 2013/14, the student questionnaires were filled out in November and December, given that these months were perceived as convenient by the schools and fell in the period in which the online national monitor questionnaire could be accessed (October – January). In 2011/12, the questionnaire was administered in April due to difficulties with initiating the study (the researcher who could coordinate the data collection was not yet employed). In total, across all three school years, a sum



TABLE 2 NUMBER OF STUDENT OBSERVATIONS, BY SCHOOL AND SCHOOL YEAR

	Total		2011/2012		2012/2013		2013/2014	
	Exp.	Cont.	Exp.	Con.	Exp.	Cont.	Exp.	Cont.
Questionnaires (<i>n</i> = 261)	128	133	33	42	51	44	44	47
Tests (<i>n</i> = 1064)	501	563	108	155	214	190	179	218
Vocabulary (<i>n</i> = 368)	176	192	37	49	70	65	69	79
Reading comprehension (<i>n</i> = 284)	133	151	24	42	65	53	44	56
Spelling (<i>n</i> = 412)	192	220	47	64	79	72	66	84

Note. Exp. = Experimental school; Cont. = Control school.

total of 261 questionnaires was completed by 72 students from the experimental school and 68 students from the control school (see Table 2).

The students completed the questionnaires at school. In the introductory part of the survey, they were asked to read each question thoroughly before answering it and they were informed that in some cases multiple answers could be checked and that they could ask the teacher (or researcher) for help in case they would not understand a question. It was also emphasized that the questionnaire was not a test and, thus, that there were no right or wrong answers. Most of the experimental school students filled out an online version of the questionnaire in a computer room. This happened in groups of up to eight students under the guidance of the researcher and/or the reading and media coach (and sometimes a teacher was present as well) who clarified questions whenever necessary. On request of one teacher, a few students filled out the questionnaire in the classroom, as this teacher preferred that these students did not leave the classroom the day the survey was being administered. As the control school did not have a separate room with computers, the school decided to administer the student questionnaires in the classrooms under the guidance of the teacher who clarified the questions whenever needed. However, there were only a limited number of computers in the classrooms and teachers did not have a lot of time to help students. On request of these teachers, a paper and pencil version of the survey was made available for the control school for reasons of efficiency. In the school years 2011/12 and 2012/13, almost three quarters of the control school students filled out the paper version; during the last school year, all control school students completed the paper version. At the control school, in total 22 student questionnaires were filled in online (16.5%) and 111 on paper (83.5%). At the experimental school, in total, 122 digital questionnaires (95.3%) and 6 paper surveys were completed (4.7%).

As part of the student monitoring system used by the schools, frequently used standardized Dutch Cito-tests covering vocabulary, reading comprehension, and spelling were taken by the students during all school years. These measurements usually took place once or twice a year at both the experimental and control school, often half way the school year (mid-term test) and/or at

the end of the school year (end-term test). The paper-and-pencil tests were administered in class after an instruction provided by the teacher, following the manual of the tests. For the purpose of the present study, the test scores were provided by the schools and, using a coding system that guaranteed anonymity, connected to the questionnaire data. In total, 129 students (experimental school *n* = 61; control school *n* = 68) completed one to six Cito-tests on one or more aspects of language and reading ability. Across the three school years, 1064 student observations were available: 368 for vocabulary, 284 for reading comprehension, and 412 for spelling (see Table 2).

Students of the experimental and control school qualified for inclusion in our analyses if they had a non-Western background and attended grade 2, 3, 4, 5 or 6 during one or more of the following school years: 2011/12, 2012/13, and 2013/14. It was not possible to also include students with a native Dutch and Western migrant background in the study, given the limited number of students from these groups in the schools.¹ One student was excluded from the analyses because she first visited the experimental school and then attended the control school during the time span of the study. Four other students whose parents did not give their consent for participation were excluded as well. The final sample consisted of 143 students (experimental school *n* = 72; control school *n* = 71), with one to three observations for reading attitude and reading behavior, and/or one to six observations on one or more aspects of language ability and reading proficiency.

The characteristics of the total sample are presented in Table 3. The students' age ranged from 7 to 13 years, with an average of approximately 10 years. About an equal number of boys (49%) and girls (51%) participated in the study. The vast majority of the students (90.2%) were born in the Netherlands (i.e., second generation migrants). Most students had a Moroccan background (73.4%); children from the other three major migrant groups in the Netherlands (Turkish, Surinamese, and Antillean) made up 13.3% of the sample, and other non-Western minority students accounted for the remaining 11.2% of the sample. The parental educational level ranged from no education (score 0) to higher vocational education/university (score 4). Two thirds of the students' parents, mostly born and raised in a non-Western country, had completed a lower track of secondary education or had received less or no formal education. The parents of the control school students had a higher educational level (*Mean* = 2.12, *SD* = 1.42) than those of the experimental school students (*Mean* = 1.45, *SD* = 1.09), $F(1, 141) = 10.05, p = .002$. Thus, when comparing the two schools, we had to take into account the difference in parental educational level as it is a factor known to be influential for language and reading skills of children (Driessen, 2003; Gijsberts & Iedema, 2012). The students' reading climate at home (*Mean* = 2.29) was not that favorable, considering that a score of 1 indicates the least reader-friendly climate and a score of 4 the most reader-friendly climate. So far as we could assess on the basis of the completed parental questionnaires – available for almost 60% of the students –, most students usually spoke Dutch with their parents (47%). About 13% of the students spoke in a non-Dutch language with their parents, and the other students (40%) spoke both Dutch



TABLE 3 CHARACTERISTICS OF THE TOTAL SAMPLE OF STUDENTS ACROSS THE SCHOOL YEARS 2011/12 – 2013/14, BY SCHOOL

	Total (<i>n</i> = 143)	Experimental (<i>n</i> = 72)	Control (<i>n</i> = 71)
Age (<i>mean</i>)	10.17 (1.61)	10.40 (1.65)	9.94 (1.55)
Gender (<i>n</i>)			
Boys	70	37	33
Girls	73	35	38
Country of birth (<i>n</i>)			
The Netherlands	129	59	70
Other	14	13	1
Ethnicity (<i>n</i>)			
Moroccan	105	60	45
Turkish, Surinamese, and Antillean	19	3	16
Other non-Western	19	9	10
Parental educational level (<i>mean</i>)	1.78 (1.30)	1.45 (1.09)	2.12 (1.42)
Reading climate at home ^a (<i>mean</i>)	2.29 (.68)	2.26 (.76)	2.33 (.59)
Language spoken with parents ^b (<i>n</i>)			
Dutch only	40	16	24
Non-Dutch only	11	8	3
Both Dutch and other	34	22	12

^a Note that for reading climate only data from the second and third school year were available for the students (*n* = 112; 78.3%).

^b Note that a value for language spoken with parents was only available for 59.4% of the participants (*n* = 85).

and another language with their parents. Relatively more experimental school students used only a non-Dutch language or both Dutch and another language, whereas a higher percentage of the control school students spoke only in Dutch with their parents.

PARENTS

To gain more insight into the characteristics of the students' families, a parental questionnaire was handed out at both the experimental and control school. In an accompanying letter, parents were informed about the study, the questionnaire in particular, and how to hand in the survey. In the introduction to the questionnaire, it was emphasized that the data would be used for research purposes and that their answers would be processed anonymously. The parents were also asked for consent for their children to participate in the study. In the school years 2011/12 and 2012/13, they were, in first instance, asked to hand in the bottom of the letter with either their explicit permission or their objection. Not all parents responded to this request, but of the ones who did nearly everyone gave their consent. Moreover, the schools indicated that they expected most parents to respond positively. Therefore, later in 2012/13 and in the school year 2013/14, letters were sent to the parents which informed them about the study and which indicated that they could notify the principal if they would object to their child's participation.

The parental questionnaires were handed out around the same time the student surveys were administered: in April and May 2012 and in November and December 2012 and 2013. At first, the paper surveys were handed out in class to the students with the request to hand it over to their caretaker(s), and sometimes handed out to the parents themselves (e.g., to parents that picked up their child in class). On request of the local principal, parents of the control school were also offered the possibility of filling out a digital version of the parental questionnaire during the last two school years, of which the link was sent to them via e-mail. Parents were asked to hand in or complete the survey at a specified date, giving them about one week to complete it. In the second and third school year, parents were asked to hand in the survey during the planned parent-teacher conferences afternoons and evenings. During these days, parents who wanted to complete the survey but were having trouble with the Dutch language could make use of help provided by the researcher and librarians, including someone who could translate the survey for parents with a Moroccan background. For a smaller group of parents no translation could be provided. However, many parents who needed help could understand spoken language, but were not (fully) able to read and understand the written survey, and we had the impression that it was sufficient someone explaining the questionnaire to them in Dutch. Some parents were assisted by others, such as an older child, a brother or sister, or a neighbor.

As many parents had not handed in the parental questionnaire at the given date, the parental questionnaire was handed out again each wave. In the school year 2011/12, the reading and media coach called at the houses of students to inform the parents about the study and to ask them to complete the questionnaire. During the last two waves, the researcher put a parental questionnaire in the letterbox of parents who had not yet filled out a survey. Some questionnaires were sent by regular mail. Again, the parents were asked to complete the questionnaire within about one week. To enhance the response rate, parents who completed the survey during the last wave of data collection received a gift card to the amount of € 5,- to be spent at a large Dutch retail and drugstore chain. The total response rate among parents was 52.5% (i.e., percentage of students for whom a parental questionnaire was filled out), with a higher response rate at the experimental school (57.0%) than at the control school (48.1%). The response rate substantially increased over the school years from 21.3% in the first school year to 56.8% in the second school year and 73.6% in the third school year.

TEACHERS

Once a year, a teacher questionnaire was administered at both the experimental and control school (see Table 4). The digital questionnaire, which was part of the national Monitor the Library at School, needed to be filled out for each class separately; in case of a combination class (i.e., two grade levels in one class combined), a teacher questionnaire had to be completed for each grade. Around the same period the student questionnaires were administered, a link was sent to the



TABLE 4 NUMBER OF TEACHERS PARTICIPATING IN THE STUDY (GRADES 2 – 6), BY SCHOOL AND SCHOOL YEAR

	Total		2011/2012		2012/2013		2013/2014	
	Exp.	Control	Exp.	Control	Exp.	Control	Exp.	Control
Teachers	15	17	5	6	5	6	5	5

Note. Exp. = Experimental.

e-mail addresses of the teachers, which guided them to the online survey. When a class had more than one teacher, only one teacher received the link and he or she was encouraged to complete the survey together with the other teacher. A few teachers completed a paper version of the survey made available on their request.

The data from the teacher questionnaire were used to gain insight into differences and similarities between the two schools with regard to the reading promotion activities in class and usage of a book collection in class. In addition, more information about the reading promotion efforts at the schools and their language and reading education was gathered through an interview with the principal and a so-called “internal counselor” who is concerned with the school’s student care (experimental school) or with the principal and a teacher (control school).

READING AND MEDIA COACH

The reading and media coach employed by the library completed a digital questionnaire that was part of the Monitor the Library at school, containing questions about the involved school library, book lending, and the reading promotion policy at school. Moreover, during interviews, she described the school library program in more detail (see Appendix A).

MEASUREMENT INSTRUMENTS

As indicated in the previous section, questionnaires were administered to students (grades 2–6), their parents, teachers, and the reading and media coach. In addition, several tests were administered to the primary school students. Furthermore, some data about background variables and enrollment in school were used from the schools’ student administration. This section describes the instruments and variables² used in the present study.

STUDENT QUESTIONNAIRE

The questionnaires administered in the present study were developed for students attending grades 2 to 6 of primary school. In the present study, two self-report questionnaires were used: the existing national Monitor the Library at School and an additional questionnaire. On the one hand, we wanted to avoid putting an unnecessary heavy burden on the participants. Therefore we used the monitor, an instrument especially designed for the purpose of monitoring the effectiveness

of the national program the Library at School. This survey was administered at the experimental school as part of the Library at School program, irrespective of our research project, and the control school also agreed to participate in the monitor. In designing the monitor questionnaire, maximizing practicability was deliberately preferred over scientific utility, by aiming at gathering as much as information as possible with a limited number of items (Huysmans, Kleijnen, Broekhof, & van Dalen, 2013). Moreover, the monitor data were available for three school years and the results could be compared to the national figures. On the other hand, we wanted to get a fuller understanding of the students’ reading attitude, reading behavior, and reading climate at home (an important confounding factor), using reliable variables based on previous research. Therefore, an additional survey was constructed for our research project to complement the monitor in the second and third school year. The additional questionnaire contained a more extensive set of questions, taking into account questionnaire items used in previous studies and following literature on survey research among children (e.g., Borgers & Hox, 2002; Borgers, Hox, & Sikkels, 2004; de Leeuw, 2011).

Monitor the Library at School. The Monitor the Library at School consists of online questionnaires for students, teachers, and reading and media consultants. This instrument gives insight into the results of the collaboration between schools and libraries and its main objective is providing these institutions with information that can help them improve the outcomes of their cooperation. The survey designed for students contained approximately fifteen questions about the children’s attitude toward reading, leisure reading behavior, reading preferences, reading climate at home, library visits, and possession of books. The monitor is administered nationally on a yearly basis. After a pilot phase in 2010, involving only a few schools and libraries, the monitor has now been completed several times throughout the country: in school year 2011/12 over 5,000 students filled out the questionnaire, in 2012/13 approximately 30,000 students did so, and in 2013/14 about 60,000 students completed it. The monitor data are recorded in a national database, and we were given access to the data of the schools involved in our research project.

Additional student questionnaire. In designing the additional questionnaire, relevant findings from the literature on dealing with primary school students as respondents were taken into account as much as possible as well as items and scales used in previous research. For example, literature on survey research among children advises to avoid negatively formulated questions, as it makes the intended meaning ambiguous for them (de Leeuw, 2011; Borgers & Hox, 2002). Furthermore, research by Borgers and Hox (2002) among 8- to 18-years old youngsters has suggested that the length of the questions be limited. In general, response reliability decreases as the length of the question increases, which is due to the higher demand longer questions place on verbal memory (Borgers et al., 2004). With respect to answering categories, literature advises to avoid unbalanced questions with an unequal number of positive and negative response options (Borgers & Hox, 2002; de Leeuw, 2011). It also seems advisable not to offer children a neutral mid-

point category and a 'don't know' option (Borgers et al., 2004; de Leeuw, 2011). After taking all their results into consideration, Borgers et al. (2004) concluded that offering about four response options would appear to be optimal with children as respondents, although a 2-point scale also has relatively reliable responses (Borger & Hox, 2002). Offering fully labeled response options is advisable as well, as completely labeled scales seem more valid and reliable than partially labeled scales (Borgers & Hox, 2002; de Leeuw 2011). However, de Leeuw (2011) remarks that in using pictorial response options, an exception to the rules for labeling and the number of answer categories can be made. Furthermore, in general, it appears that offering ambiguous questions and response scales (e.g., vague quantifiers such as 'often' and 'sometimes') leads to lower data quality (Borgers, de Leeuw, & Hox, 2000; de Leeuw, 2011). On the other hand, studies by Borgers et al. (2004) and Borgers and Hox (2002) did not find a negative effect of ambiguity of the answering categories. Researchers should also be aware of the fact that children are very sensitive to the slightest suggestion and are inclined to agree to statements ('yeah-saying'). Suggestively phrased questions, such as "reading is good (agree/disagree)" should therefore be avoided (de Leeuw, 2011). Questions asking for a numeric quantity are also hard to answer for children (de Leeuw, 2011), whereas offering a well-defined reference period in a question has a positive effect on the reliability of the answers (Borgers & Hox, 2002).

The additional questionnaire was tested in a pilot before it was administered to the students who participated in the present study. In October 2012, three primary schools in Gouda with a multicultural student population were approached for testing the extra items, and one school agreed to participate. The principal gave the researcher permission to visit the school to administer the questionnaire to a group of students. The teachers of 2nd to 6th grade were each asked beforehand to select a couple of children in their class, making sure there would be variation with respect to the children's reading and language level, gender, and ethnic background. The number of selected students added up to 24 children (12 boys and 12 girls) from different cultural backgrounds (e.g., Moroccan and Turkish). During the test day, the students were invited one by one to complete the questionnaire in a quiet room outside the classroom under the guidance of the researcher herself. After she explained to the students what they had to do and that it was not a personal skills or knowledge test, the children started filling out the paper survey. The researcher observed the children and kept track of the time. Once the students completed the survey, the researcher asked them what they thought of the questionnaire and whether all the questions and answer categories were clear to them. As there were two versions of several questions (e.g., in terms of wording and number of answering categories), the children were also presented the other version and asked which one they preferred. They were also asked to describe in their own words what they thought of reading in their leisure time to detect whether the presented reading attitude items covered their opinion, but no other terms than the ones listed in the questionnaire were mentioned (e.g., very nice, boring, good), except for the term 'normal' once. Furthermore,

the students were asked how they would define the term 'leisure' in order to explore whether this concept was clear to them. Based on the feedback of the students and an inspection of the completed surveys, the initial setup of the additional questionnaire was slightly adjusted to create the final version of the survey.

Variables.

Reading attitude. Reading attitude is conceptualized in the present study as an overall evaluation of reading books during leisure time, consisting of a hedonic as well as a utilitarian component (i.e., enjoyable and useful, respectively). In the monitor, one question focused on the students' (hedonic) reading attitude: "How do you feel about reading a book?" The children were offered four answer categories: 'annoying'; 'do not like it so much'; 'quite like it; and 'like it very much'. To also measure reading attitude in more depth through the additional survey, a scale in which both the hedonic and utilitarian component are represented has been constructed on the basis of previous research (e.g., Stalpers 2005; Stokmans & Broeder, 2009). The students were asked what they think of reading a book in their leisure time, followed by ten items that each consisted of four answering categories between which the children had to choose. The response options were semantic differentials: a rating scale with bipolar adjectives. Such a response scale has the advantage that it avoids 'yeah-saying' and that both children who think positively and children who think negatively about reading see their opinion explicitly stated in the scale (de Leeuw, 2011; Stalpers, 2005). Following the literature (Borgers & Hox, 2002; Borgers et al., 2004; de Leeuw, 2011), the response options were fully labeled and the children were not offered a neutral mid-point category. Five items addressed the hedonic aspect of reading attitude (e.g., 'very boring', 'pretty boring', 'pretty exciting', 'very exciting') and the other five items referred to the utilitarian aspect (e.g., 'very important', 'pretty important', 'not that important', 'not important at all'). Six items started with the answer that represented the most positive attitude toward reading, while the other four items started with the most negative reading attitude. The items that started with the most positive or most negative attitude, addressing either the hedonic or utilitarian component, were mixed in the questionnaire. For the analyses, the items starting with the most positive attitudes were reverse coded, making sure that a higher score represented a more positive attitude. The mean score of all ten items (ranging from 1-4) constituted the final reading attitude variable (satisfactory reliability; Cronbach's $\alpha = .88$) that was used in the analyses. Here, we also distinguished between the hedonic component (satisfactory reliability; Cronbach's $\alpha = .82$) and utilitarian component (satisfactory reliability; Cronbach's $\alpha = .75$).

Reading frequency. One item included in the monitor addressed the students' reading frequency: "How often do you read a book for pleasure at home?", with five response options: (1) 'never'; (2) 'a couple of times a year'; (3) 'a couple of times a month'; (4) 'a couple of times a week'; (5) 'every day'. In the additional questionnaire, the students were asked, in separate items, how



often they read (a) storybooks (fiction), (b) non-fiction (informative) books, (c) picture books, (d) magazines, (e) comic books, and (f) poems and verses in their spare time, using the same response categories. The mean score of the six items was computed to obtain a scale score (reliability just satisfactory; Cronbach's $\alpha = .71$).

Reading duration. Reading duration was asked about in the additional survey in one question with five answer categories. Students were asked how much time they spent reading a book per day during spare time: (1) 'I don't read'; (2) '15 minutes'; (3) 'half an hour'; (4) '45 minutes'; (5) 'one hour or longer'. They were presented pictures of clocks indicating the time to illustrate the response categories.

Diversity in reading preferences. In the monitor, the students were presented a list of subjects and they had to indicate about which of these subjects they liked to read: love, sports, fairy tales, technology, history, school, creepy things, humor, nature, animals, other countries, war, and friendship. A final score was computed by taking the sum of the number of topics the students liked (reliability satisfactory; Cronbach's $\alpha = .73$). The higher this score, the broader the students' preferences in reading.

Reading climate at home. A combination of three items included in the monitor and five items included in the additional questionnaire was used to assess the students' reading climate at home. In the monitor, the students were asked how often the following three situations happen: "My mother or father reads to me at home"; "My mother or father talks to me about books"; "My mother or father accompanies me to the library". The answering options offered in the first and second waves slightly differed from the ones offered in the third wave and were brought on the same 4-point scale (1 = *never*, 2 = *sometimes*, 3 = *regularly*, and 4 = *often*) afterwards. The three items measured with the monitor appeared not to build up to a reliable scale on their own and were therefore combined with the additional survey items. In the additional questionnaire, parental reading socialization was assessed through five items adapted from instruments previously used in reading research (Kraaykamp, 2003; Leseman & de Jong, 1998; Notten, 2011; Stalpers, 2005; Stokmans, 2007; van Elsäcker-Bok, 2002; Verboord, 2005): "I see my mother or father reading at home"; "My mother or father knows in what book I'm reading"; "My mother or father gives me a book as a present"; "My mother or father tells me which books are fun"; "When I was a toddler, my mother or father read to me at home". The four response categories were similar to those used for the items included in the monitor, ranging from 1 (*never*) to 4 (*often*). The mean score of the eight items constituted the final reading climate score used in our analyses (with satisfactory reliability; Cronbach's $\alpha = .81$).

Book possession. In the monitor, the children were also asked to indicate how many books they themselves own, by choosing between five answer categories: '0', '1-20', '21-50', '51-100', and 'more than 100'. Given that this item refers to the availability of reading materials at home, it can also be considered as a measure of reading climate at home. However, as the answer categories substantially differed from the other eight items addressing reading climate at home, we did not consider including this item in the reading climate scale as well.

TEACHER QUESTIONNAIRE

The teacher questionnaire (part of the Monitor the Library at School) was administered to the teachers of the experimental and control school. The questionnaire for teachers is very concise in order to maximize the response rate (Huysmans et al., 2013). We used the data from the teacher questionnaire to gain insight into the reading promotion activities in class and usage of a book collection in class (see Appendix C).

Variables.

Reading promotion activities. The teachers were asked to rate how often they engage in eight reading promotion activities on a 5-point scale ('a couple of times a week'; 'once a week'; 'a couple of times a month'; 'a couple of times a year'; or 'never'). The teachers were presented the following activities: (a) reading aloud to class, (b) introducing books in the class, (c) having students deliver a book presentation, (d) participating in a project around books and reading, (e) consulting with the team about reading promotion, (f) and organizing a book circle in class (i.e., an informal activity in class of about 15 to 30 minutes during which the teachers and students talk about books: Children are introduced to books, genres and authors, and reading experiences are exchanged; Broekhof & Broek, 2013).

Usage of book collections. First, teachers indicated whether they make use of a book collection in class when it comes to world orientation subjects (such as history and geography). They could choose between: 'no'; 'yes, sometimes'; 'yes, regularly'; and 'yes, often'. Then, the teachers were asked in two separate questions how they use (a) storybooks (fiction) and/or picture books, and (b) informative books (non-fiction), respectively, during world orientation subjects. The seven answering options for both questions were: 'I don't use storybooks or picture books / informative books when it comes to world orientation subjects'; 'I sometimes read a storybook or picture book / an informative book aloud when it comes to world orientation subjects'; 'I regularly read a storybook or picture book / an informative book aloud when it comes to world orientation subjects'; 'I often read a storybook or picture book / an informative book aloud when it comes to world orientation subjects'; 'I sometimes make the students aware of storybooks or picture books / informative books that fit the subject'; 'I regularly make the students aware of storybooks or picture books / informative books that fit the subject'; 'I often make the students aware of storybooks or picture books / informative books that fit the subject'. It was possible to check multiple response options.

PARENTAL QUESTIONNAIRE

For the purpose of the present study, a parental questionnaire was designed to gather information about the home environment of the children. We focused on characteristics which, according to the literature, can be related to the children's language ability and reading proficiency, reading behavior, and reading attitude. The questionnaire was meant for the caregivers in the household the child



lives all or most of the time, as the child is expected to be mostly influenced by the characteristics and behaviors of these persons. These caregivers are not necessarily (both) the biological parents. In the remaining part of this section, variables measured through the parental questionnaire will be discussed. When we use the term parent, this may also refer to a stepparent or other caregiver.

Variables.

Ethnic background child. To determine the children's ethnicity, their parents' and their own country of birth were taken into account, following the definition adopted by Statistics Netherlands (Alders, 2003). According to Statistics Netherlands, a person is considered migrant – also referred to as *allochtonous* – if at least one parent was born outside the Netherlands, with a distinction being made between migrants originating from Western countries (Europe [excluding Turkey], North America, Oceania, Indonesia, and Japan) and migrants coming from non-Western countries (Turkey, Africa, Latin America, and the rest of Asia). A migrant child can be born abroad (first generation) or in the Netherlands (second generation). One's ethnic background is determined on the basis of the country of birth of the person her/himself (first generation migrant) or the mother's country of birth (second generation migrant), unless the mother was born in the Netherlands. In the latter case, the country of origin is taken to be that of the father. In the parental survey, parents were asked to indicate on a list their own and their partner's country of birth: 'the Netherlands', 'Surinam', '(former) Netherlands Antilles/Aruba', 'Turkey', 'Morocco', 'Somalia', 'another country, namely' (open ended question).

Parental educational level. In the parental questionnaire, respondents were asked to report their own and their partner's highest completed educational level, if applicable both in the Netherlands and in their country of origin, by choosing between 10 and 9 categories, respectively. These options were derived from the Survey Integration Ethnic Minorities, a large-scale survey in the Netherlands focusing on the integration of the four largest non-Western migrant groups in the Netherlands and from the Survey Integration New Groups that addresses new migrant groups (Hilhorst, 2010). For the final parental educational level variable, the highest completed educational level of either parent (or single parent) was assigned to the following five categories: (a) no education, (b) primary education, (c) lbo/mavo (i.e., junior vocational training/junior general secondary education), (d) havo/vwo/mbo (i.e., senior general secondary education/pre-university education/senior vocational training), and (e) hbo/wo (i.e., vocational colleges/university). This categorization was based on a classification adopted by Statistics Netherlands and used in other studies (e.g., Gijbbers & Iedema, 2012; Kortlever & Lemmens, 2012), with the exception of the category *no education* added in the current study to distinguish parents with little or no experience with formal education.

Language spoken with parents. Respondents were asked to indicate whether their child usually speaks (a) Dutch, (b) both Dutch and another language, or (c) another language with the respondent, the respondent's partner, and siblings. As only a few children appeared to speak (also)

in a non-Dutch language with their siblings, we have chosen to focus on the language spoken with the respondent and her/his partner. The final variable *language spoken with parents* consisted of three categories: (a) Dutch only; (b) both languages (i.e., both languages with both parents, or Dutch with one parent and another language with the other parent); and (c) non-Dutch language.

READING AND MEDIA COACH QUESTIONNAIRE

The reading and media consultant questionnaire was developed within the context of the Monitor the Library at School. The survey is fairly extensive, with about 20 questions addressing topics such as the characteristics of the involved school library, book lending, and the reading promotion policy at school. Data gathered via this questionnaire were used to gain more insight into the school library concept and reading promotion at the schools (see Appendix A and C). As these data were not used for the analyses, we will not describe the items concerned in more detail.

TESTS

Pupil monitoring system. In all grades and each wave, the students' reading ability and language proficiency were measured using tests from the pupil monitoring system devised by Cito, the National Institute for Educational Measurement in the Netherlands. This system, used by many primary schools, consists of a comprehensive set of coherent paper-and-pencil (and computer-based) nationally standardized tests for longitudinal assessment of a student's achievement throughout primary education (Herweijer, 2009; <http://www.cito.nl>; Moelands, 2010). The tests are usually taken once or twice a school year during the primary school period and the results of the assessments are converted into a fixed scale for each learning area separately. Here, the raw score on a test (i.e., number of correct answers) is transformed into a value on the ability scale (i.e., a so-called scale score or ability score) of a certain subject, which forms the basis for determining progress in learning achievement over time. Moreover, the nationally standardized tests also enable us to determine the relative position of students among their peers, using data collected from various subpopulations in a national survey as a frame of reference. Based on percentiles, five ability levels (A to E) are distinguished: A = 25% highest scoring students, B = 25% students who score just above to substantially above average, C = 25% student who score just below to substantially below average, D = 15% students who score substantially below average, and E = 10% lowest scoring students (Feenstra, Kamphuis, Kleintjes, & Krom, 2010; Moelands, 2010; Visser, 2013). These levels can be further divided into an ability level value between 0 and 5 with one decimal (A = 4–5, B = 3–3.9, C = 2–2.9, D = 1–1.9, and E = 0–0.9). For instance, a student who achieves the highest in Level A has an ability level value of 5, and a student who scores quite high in level C has, for example, a level value of 2.8. Note that these values are relative scores, meaning that the underlying scores differ by grade/group, with, in general, older students achieving higher underlying scores than younger students (Cijvat & Bloemendaal, 2013; Driestar, n.d.).



For our analyses, we used the students' ability level values (0.0–5.0) on the tests covering vocabulary, reading comprehension, and spelling. These Cito-tests have satisfactory reliability (Hollenberg, van der Lubbe, & Sanders, 2011; ToetsWijzer 2015a, 2015b).

Variables.

Vocabulary. The Vocabulary Cito-tests were administered to measure the size of the receptive vocabulary of the children. These tests, usually completed at the middle and the end of grades 2 to 5 and at the start or middle of grade 6, consist of multiple choice items. The students completed the tests in class after directions given by the teacher. They were presented reading tasks and the test items addressed both the meaning of words (for instance, "What does chatting mean?") and meaning relations (for instance, "What is the opposite of chaos?"). Children attending grade 2 had to complete 50 tasks, taking ca. 30 to 35 minutes, and the tests for students in grades 3 to 6 contained 70 questions, taking ca. 45 minutes. The number of correctly answered items was converted into an ability score, and, next, transformed into an ability level value (Cito, 2015; Hollenberg et al., 2011; van Berkel et al., 2010).

Reading comprehension. The multiple choice paper-and-pencil reading comprehension Cito-tests are meant to be taken at the end of grade 2, at the middle and end of grade 3, and at the middle of grades 4, 5 and 6, and cover a broad range of text types (e.g., informative texts and fiction texts), genres (e.g., narrative, instruction, poem), and exercises (e.g., question about the text and missing parts in the text). All students were first administered the starting module and then they completed either an easier module (S1) or a more difficult module (S2), depending on their score on the starting module. The scores on S1 and S2 can be transposed on the same scale. The modules administered in the second, third, and fourth grade contained 25 questions, taking ca. 40 minutes to complete. The modules for children in the fifth and sixth grade contained 30 tasks each, taking ca. 50 minutes to complete. The number of correctly answered questions was converted into an ability score, which, in turn, was transformed into an ability level value (Feenstra et al., 2010; ToetsWijzer, 2015a).

Spelling. With the Cito Spelling tests, which are meant to be taken at the middle and the end of the school year in grades 2 to 5 and at the start or middle of grade 6, the spelling rules are not explicitly tested. Instead, the students indirectly show to what extent they master the spelling rules by, for instance, writing down dictated words and trying to recognize an incorrectly spelled word in a group of four words. The paper-and-pencil tests were completed in class after a short instruction provided by the teacher. Every test consisted of three modules: a general starting module, an easier follow-up module (S1), and a more difficult follow-up module (S2). The version of the follow-up module to be completed by the students was determined by their scores on the starting module. The scores on S1 and S2 can be transposed on the same scale. For grades 2 and 3, each module consisted of 25 tasks; the modules taken in the higher grades contained 30 exercises. Completing a module took ca. 30 minutes. The number of correctly completed tasks was transposed

into an ability score, which, in turn, was converted into an ability level value (de Wijs, Kamphuis, Kleintjes, & Tomesen, 2010; ToetsWijzer, 2015b).

STUDENT ADMINISTRATION

For the purpose of the present study, both schools made their student administration system available to the researcher. This database system presents background information on every student, such as their gender, date, and country of birth, and educational level of their parents. We used these data to complement the data gathered through the questionnaires.

Variables.

Age. The students' date of birth listed in the student administration was used to determine the age of the students at the time the student questionnaires and tests were administered.

Gender. Whether a child is a boy or a girl was indicated in the student administration.

Ethnic background. Information about the students' and their parents' country of birth, was used to determine the ethnic background of the students (in case parents had not completed the parental questionnaire).

Parental educational level. The school administration has provided us with information on the educational level of the parents (which was used when parents had not completed the parental survey).

Time. The students' date of enrollment in school was used to construct a time variable, indicating how many months they had been attending the school at the time the measurements took place, starting from September 2011 (i.e., the opening of the school library), excluding the summer holiday months (July and August). For the experimental school, this time variable was used as a proxy for months of availability of the school library, whereas for the control school it was used for comparison, indicating how many months the students had been attending the control school starting from the same date. The way this time variable was constructed was guided by the fact that the questionnaires and tests were not administered at the same time points during the different school years and the fact that a considerable group of students entered the experimental school during the second school year.

VARIABLES OVERVIEW

To conclude, Table 5 presents an overview of the variables discussed in the former sections of this appendix. It shows which variables were used for which part of the research project, referring to the three empirical chapters. The items included in the teacher survey and reading and media coach questionnaire were used for Appendices A and C.



TABLE 5 OVERVIEW OF INCLUDED VARIABLES PER CHAPTER

	Chapter 3	Chapter 4	Chapter 5
Reading attitude			
Reading attitude (MQ)	x		x
Reading attitude (AQ)	x		
Hedonic component	x		x
Utilitarian component	x		x
Reading behavior			
Reading frequency (MQ)	x		x
Reading frequency (AQ)	x		
Storybooks	x		x
Non-fiction books	x		x
Picture books	x		x
Magazines	x		x
Comics	x		x
Poems and verses	x		x
Reading duration	x		x
Diversity in reading preferences	x		
Reading and language skills			
Vocabulary		x	x
Reading comprehension		x	x
Spelling		x	x
Background factors			
Ethnic background ^a	x	x	x
Gender	x	x	x
Age	x	x	x
Parental educational level	x	x	x
Reading climate at home ^b	x	x	x
Language spoken with parents		x	x ^a
School	x	x	x
Time	x	x	x

Note. MQ = Monitor questionnaire; AQ = Additional questionnaire.

^a Not included in the main analyses.

^b Although not included in our main analyses, the separate reading climate variable 'book possession' was used in the Discussion section of Chapter 3.

Notes

1. Although data was collected for all students (grades 2 to 6) attending the schools, only students with a non-Western background were included in the sample used for the analyses. This appendix focuses on the latter group, given that our findings are based solely on these students.
2. This section only describes the variables included in our research. For instance, the student questionnaire also contained questions about information skills in the third school year. These and several other items, however, were not part of our analyses and will therefore not be discussed. The same holds for a couple of items (around the using the Internet) included in the teacher questionnaire in the third year. The parental questionnaire also included several other items next to the variables discussed in this chapter, such as single parenthood, family income, and reading behavior of parents. We have chosen not to include these variables in our analyses in order not to lose statistical power (due to the considerable amount of missing data on these factors and the complexity of our models that would have been increased). The excluded variables, though, were often related to variables we did include, such as parental educational level and reading climate at home as measured through the student questionnaires.



APPENDIX C

EXPERIMENTAL AND CONTROL SCHOOL

In the Netherlands, primary education lasts for eight years. Although education is compulsory from the age of 5, virtually all 4-year-olds are enrolled in primary schools (Herweijer, 2009). The first two school years, group 1 and 2, can be regarded as kindergarten. From group 3 (i.e., first grade), formal instruction in reading, writing, and math starts. After the final year in primary school, group 8 (i.e., grade 6, around the age of 12), the students move on to one of the secondary school tracks, depending on their attainment level (Driessen & Merry, 2013; Spotti & Stokmans, 2013). As there is no national curriculum, Dutch elementary schools are free to shape their curricula. Although this freedom implies that schools are free to determine the methods and content of teaching, the central government sets quality standards and learning objectives that apply to all primary schools. These objectives provide a legal prescription for the skills and knowledge students are expected to have attained at the end of primary education. The Inspectorate of Education monitors the schools' compliance with central rules and regulations, and the quality of education provided by the schools (Nusche, Braun, Halász, & Santiago, 2014). In the remainder of this section, we will elaborate on the language and reading education, book collection, and reading promotion activities provided at the two schools involved in our research project, based on interviews with the schools (principals and a teacher or "internal counselor"), teacher questionnaires (*Monitor the Library at School*), and documents provided by the schools.

LANGUAGE AND READING EDUCATION

SCHOOL STAFF

The schools' (educational) staff consisted of a principal, teachers, and so-called internal counselors who are concerned with the schools' student care, including monitoring the students' school performance, remedial teaching, supporting teachers in dealing with students who need extra attention, and referring students and parents to other institutions. Both schools also employed interns and at the experimental school there were also educational assistants present who assisted some teachers. Both schools consulted with (part of) the school staff on a regular basis, and sometimes the teachers were observed in class by the principal and/or an internal counselor and received feedback on their teaching to improve their lessons. At both schools, teachers and internal counselors occasionally followed courses on language and reading related topics on their own initiative. At the experimental school, in 2009, one of the internal counselors followed a language coordinator course addressing language education in primary education. Two teachers, the reading coordinators, followed a course *Open Book* in the school year 2013/14. They were responsible for the formulation and implementation of a reading plan aimed at

reading promotion. In January 2014, a teacher of the control school was also assigned as reading coordinator, but she focused more on reading and language education than on reading promotion. She did not follow a particular course, although she had complemented a master in Remedial teaching with special attention paid to reading and language education.

STUDENT WEIGHT

In the Dutch education system, students can be assigned a so-called *student weight*, which indicates whether a child has a disadvantageous background. Schools are allocated a higher budget when their population includes children who are assigned a student weight (de Witte & van Klaveren, 2012). The Dutch Ministry of Education distinguishes between three types of student weights, based on the educational level of the parents (or caretakers). A weight of 0.3 is assigned to students whose parents do not have a higher secondary diploma but followed lower secondary education (i.e., junior vocational training or a lower track of junior general secondary education: lbo/vbo, praktijkonderwijs, and vmbo basis- or kaderberoepsgerichte leerweg). This condition regarding parental education level also applies to single parent families. A weight of 1.2 is assigned to children with one parent who at most completed primary school or special education and one parent with the same educational level or at most a lower secondary diploma. For single parent families, a weight of 1.2 is assigned when the parent only received education at primary school level. The remaining group of students, without a disadvantageous background, are assigned the "neutral" student weight 0 (CFI, 2006; de Witte & van Klaveren, 2012). Many participants of the experimental school and control school involved in our research project were assigned a student weight (>0; 79.2% and 52.1%, respectively). In both schools, the extra money was spent on staff, resulting in smaller classrooms.

METHOD

During the school years 2011/12 - 2013/14, the experimental and control school mostly used the same methods for language and reading education, developed for students attending grades 2 to 6 (Table 1). The programs used by the schools are frequently used methods in the

TABLE 1 EDUCATIONAL METHODS FOR READING COMPREHENSION, VOCABULARY, SPELLING, AND TECHNICAL READING, BY SCHOOL

Skill	2011/2012		2012/2013		2013/2014	
	Experimental	Control	Experimental	Control	Experimental	Control
Reading comprehension	Nieuws-begrip	Goed gelezen!	Nieuws-begrip	Nieuws-begrip	Kidsweek in de Klas	Nieuws-begrip
Vocabulary	Taal actief	Taal actief	Taal actief	Taal actief	Taal actief	Taal actief
Spelling	Taal actief	Taal actief	Taal actief	Taal actief	Taal actief	Taal actief
Technical reading	Estafette	Estafette	Estafette	Estafette	Estafette	Estafette



Netherlands (Kuhlemeier et al., 2014). The experimental school spent ca. 10 to 11 hours per week on language and reading education in second to sixth grade, and the control school at least 9 hours. The remaining time was spent on other subjects, such as math, writing, music, history, and gymnastics. The exact curriculum differed by grade.

In teaching reading comprehension skills, the experimental school used the method “Nieuwsbegrip” in the first two school years and the method “Kidsweek” during 2013/2014, whereas the control schools used the method “Goed gelezen!” in the first school year, and the method Nieuwsbegrip in 2012/13 and 2013/14. Nieuwsbegrip contains interactive reading lessons and context assignments based on current events (CED-groep, n.d.). Kidsweek also focuses on current events, by connecting lessons to a weekly newspaper (Kidsweek in de Klas, n.d.). The method Goed Gelezen!, which is divided into 6 blocks of 5 weeks, consists of varying texts, illustrations, and practices that children can relate to (Educatheek, n.d.). For vocabulary and spelling, both schools used the method “Taal actief”. This method consists of ten themes (e.g., health, and traffic and transport) taking three weeks each (SLO, 2009). In working with Taal actief, both schools used tablets for some classes instead of paper-based materials. At the experimental school, this happened in grades 2, 3 and 4 in 2013/14, and at the control school tablets were used in second grade in 2012/13, and in grades 2, 3, and 4 in 2013/14. The tablets provided the students with direct feedback and level-adjusted assignments. For technical reading, both schools used the method “Estafette”. This program, consisting of different materials such as storybooks and work books, is not bounded by group, but is based on reading level (de Wit, 2012; Zwijsen, n.d.). In sum, the methods used at the schools were virtually the same, making it more likely that differences found in our study in student performance can be traced back to the presence and program of the school library at the experimental school (described in Appendix A).

OBJECTIVES

With regard to language and reading education, the teachers of both schools set goals for their students. They used the lesson objectives formulated by the methods and they expected their students to sufficiently master the knowledge and skills taught by the end of the school year. Moreover, in their group plans, they added other objectives as well. At the experimental school, teachers formulated percentages of students they wanted to perform above (minimum-%) or below (maximum-%) a certain Citoscore-level at the end of the school year (e.g., by the end of second grade, 90% of the students attains a level A, B, or C score for reading comprehension, and less than 5% of the students performs on level E (lowest) for technical reading). At the control school, teachers indicated on what level they wanted their students to perform (e.g., the students perform at level E4 (i.e., average level for students at the end of second grade) or M5 (i.e., average level for students halfway third grade) by the end of second grade).

DIFFERENTIAL EDUCATION

At both schools, attention was paid to differentiated learning during the time span of the research project. The experimental school started to work with so-called group plans for technical reading in the school year 2011/12 and its teachers have worked with these plans for reading comprehension since halfway the third school year. The control school started to use group plans for technical reading as of the school year 2013/14. In working with the group plans, the class was divided into three ability level groups: basis, intensive, and enriched (i.e., students performing around the average, students performing substantially below average, and the highest performing students, respectively). During the lessons, the teachers adjusted their instruction to the level of the three groups. Before the implementation of the groups plans, and in teaching other areas (such as spelling and vocabulary), teachers of both schools also tried to adjust the lessons to the students' needs, although less recorded and efficiently compared to working with the plans. For instance, less skilled students received more instructions and the teachers also used several ability levels already distinguished in a method.

Both the experimental and control school paid extra attention to low achieving students and high achieving ones. With respect to high performing students, the schools offered these students a separate “plus class” once a week where they would work on challenging assignments. For students with a learning disadvantage, the schools formulated an individual learning line or so-called “handelingsplan” with a development perspective for the particular child, who was offered extra help/guidance. For groups of (migrant) students who lagged behind in language (but not in math), there was intensified language education available at both schools in so-called insertion classes (“schakelklassen”). During school hours, these students were taught in small groups outside the classroom on three or four days a week, for two hours. The experimental school also taught a class of new migrant students (aged 6 to 13 years) who had just arrived in the Netherlands and did not speak Dutch sufficiently to attend regular classes (these students were not included in our study). Thus, both schools devoted extra attention to low achieving students and high achieving ones, in addition to differentiated learning in class.

STUDENT ACHIEVEMENT MONITORING

The experimental and control school administered the same Cito-tests (see Appendix B) to monitor the reading ability and language proficiency of the students. The results were evaluated at both schools and used for improving the education provided to the students. Following the test scores, the school teams discussed which skills required extra attention. In addition, for individual children, test scores were used to adjust the education to the students' needs, in terms of offering extra support for low performing children and challenging students who achieved the highest scores.



BOOK COLLECTION

As in many Dutch schools, reading materials were present at both the experimental and the control school. However, a major difference is that the experimental school had a school library at its disposal, run and facilitated by the town's public library organization, with a large, well sorted, and varied collection of reading materials. Compared to the experimental school, the collection of the control school was smaller, far less varied and up-to-date, less well managed, and in the school's own possession, with teachers (and not a reading and media coach) being responsible for the book collection.

Apart from the collection in the library facility (described in Appendix A), the experimental school also had books of their own: about 600 books in rough numbers, including storybooks, informative books, picture books, magazines, and comics. The reading materials, which were not taken home by the children, were placed on shelves in the hallways and in some classrooms. There was limited funding available for purchasing new books, which did not happen structurally after the opening of the library facility. A couple of new titles were only purchased for reading promotion projects, such as the *Children's books week* ("Kinderboekenweek") and the *National reading aloud days* ("Nationale Voorleesdagen"). The book collection of the school was controlled by the language coordinator and the reading coordinators of the school (i.e., internal counselor and teachers). Compared to the books in the integrated library facility, the school's book collection was smaller, and far less up-to-date and varied.

It was estimated that the control school possessed about 750 books (i.e., picture books, storybooks, informative books, comic books, and magazines). As was the case at the experimental school, the students did not take these books home. The reading materials for second graders were on shelves in the hallway, whereas the reading materials for the older students were placed in a separate room and in the classrooms. During the time of the study, the collection of the school consisted of many old books the children did not like to read. There was a limited amount of money available for purchasing new titles, which only happened during the Children's books week. Sometimes, the school borrowed some books from the public library or received reading materials from parents. All school teachers were responsible for the school's book collection.

The teacher questionnaires ($n = 32$) of the Monitor the Library at school give more insight in the usage of the book collection in class in grades 2 to 6 in the school years 2011/12 - 2013/14. No statistically significant differences between the three school years were found. There were, however, several differences between the two schools. The results showed that, overall, teachers of the experimental school ($M = 2.40$, $SD = .51$) more frequently used a book collection in class for world orientation subjects, such as history and geography, than teachers of the control school ($M = 1.88$, $SD = .60$), $F(1, 30) = 6.84$, $p = .014$, as measured on a 4-point scale (1 = *never*, 4 = *often*). All teachers in the experimental school used a book collection sometimes (60%) or regularly (40%) in class. At the control school, 23.5% of the teachers never used a book collection, and 64.7%

and 11.8% did this sometimes or regularly, respectively. More specifically, when it comes to world orientation subjects, teachers of the experimental school more often read a storybook or picture book aloud, $F(1, 30) = 4.20$, $p = .049$, more often read an informative book aloud, $F(1, 30) = 5.46$, $p = .026$, and more often made the students aware of storybooks or picture books / informative books that fitted the subject, $F(1, 30) = 10.33$, $p = .003$; $F(1, 30) = 8.26$, $p = .007$. All in all, compared to the control school, the teachers of the experimental school used the book collection more frequently in class, and the experimental school had access to a collection that was larger, more varied and up-to-date, and managed by a reading and media coach.

READING PROMOTION ACTIVITIES

Both schools paid attention to reading promotion at school in all school years. Since 2013/14, the experimental school has followed a reading promotion policy plan, formulated by the reading coordinators (teachers who followed a course Open Book). This plan contained the school's vision on reading (e.g., "The children enjoy reading and consider reading as a useful activity"; "The school cooperates with the reading and media coach of the library"; "There is a varied and attractive book collection available"; "There is structural time for free reading of a book of choice"). The plan also contained a schedule for reading promotion activities (i.e., reading aloud to children; working interactively with picture books; telling a story; free reading; reciting a poem or verse; oral or written book presentations; book circle; book project). In prior years, time was also spent on reading promotion activities, but this was not explicitly formulated in a plan. At the control school time was spent on similar activities, such as free reading, reading aloud to children, book presentations, and reading promotion projects, and the school sometimes made use of public library services (e.g., a book box and author visit). The control school did not have a reading promotion policy plan over the whole period of study.

In the teacher questionnaire (part of the Monitor the Library at School) administered in 2011/12, 2012/13, and 2013/14, teachers of both schools (grades 2 to 6) were asked to indicate on a 5-point scale ('never'; 'a couple of times a year'; 'a couple of times a month'; 'once a week'; 'a couple of times a week') how often they engaged in the following reading promotion activities at school: reading aloud to class; introducing books in the class; having students deliver a book presentation; participating in a project around books and reading; consulting with team about reading promotion; organizing a book circle in class (i.e., an informal activity in class of about 15 to 30 minutes during which the teachers and students talk about books: Children are introduced to books, genres and authors, and reading experiences are exchanged; Broekhof & Broek, 2013). The overall results are presented in Table 2. The schools did not differ significantly on the extent in which attention was paid to these reading promotion activities, nor were there statistically significant differences between school years. Reading aloud to the children was the most popular activity, which happened at the experimental school a couple of times a week and at the control

**TABLE 2** READING PROMOTION BY TEACHERS ($n = 32$), BY SCHOOL

Activity	Experimental school ($n = 15$)		Control school ($n = 17$)	
	Mean	SD	Mean	SD
Reading aloud to class	5.00	.00	4.47	1.18
Introducing books in the class	2.60	.74	2.71	.77
Students giving presentation of a book	3.07	.80	3.53	1.28
Participating in project around books/reading	2.00	.38	1.94	.24
Consult with team about reading promotion	2.00	.00	1.94	.66
Organize a book circle	1.94	.99	1.41	.62

Note. A higher mean indicates more frequently engaging in the activities (range 1-5).

school a couple of times a week to once a week, followed by having students deliver a book presentation and introducing books to the children. According to most teachers, participating in a project around books and reading, and consulting with the team about reading promotion took place a couple of times a year. In total, 40% of the teachers in the experimental, and 64.7% in the control school indicated never organizing a book circle in class.

Furthermore, at both the experimental and control school, time was spent on free reading (i.e., reading for pleasure) in class during all school years. In the school year 2013/14, at least 15 minutes per day were scheduled for free reading at the experimental school, as recorded in the school's reading promotion policy plan. In the prior school years, free reading also took place regularly, but it was not yet an explicit component of the school program. Reading for pleasure often took place at the start of the school day or after a (lunch) break. As of the year 2013/14, the control school also paid attention to free reading more deliberately, by scheduling at least 10 minutes a day for reading for pleasure at a set time. Free reading also took place regularly during the other school years, but not at a set time. At both schools, the students read a book of their own choice. Control school students read books from the school's own collection, whereas the experimental school children mainly borrowed books from the library facility in the school. In case a student did not like the chosen book at all, at both schools, he or she was allowed to exchange it with another one. During free reading time, most teachers of the schools tried to set an example by reading themselves. All in all, at both the experimental and control school time was spent on reading promotion activities, including free reading in class and reading aloud to children, albeit the experimental school had two reading coordinators who formulated a reading promotion plan that was used in the last school year.

EXPERIMENTAL SCHOOL VERSUS CONTROL SCHOOL

To sum up, there were no major differences between the two schools with respect to language and reading education and reading promotion activities, except for the school library program

at the experimental school (Appendix A). Both schools had many students assigned a student weight and spent extra money on staff. During the time span of the study (2011/12 - 2013/14), the experimental and control school mostly used the same educational methods for language and reading. The schools paid attention to differentiated learning and also devoted extra attention to low achieving students and high achieving ones. With regard to language and reading education, the teachers of both schools set goals for their students and they monitored and evaluated the students' reading and language achievement. The schools did differ on their book collection. Compared to the control school, the collection available to the experimental school was larger, more varied and up-to-date, and it was managed by a reading and media coach employed by the public library. Moreover, the teachers of the experimental school also used the book collection in lessons around world orientation subjects more frequently. With regard to reading promotion, two experimental teachers followed a reading coordinator course and formulated a plan aimed at reading promotion. Although the control school did not have such a plan, attention was paid to activities also carried out at the experimental school, such as free reading in class, reading aloud to children, having students' deliver book presentations, and participating in reading promotion projects.

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For all chapters, it holds that the PhD candidate E. Kleijnen wrote the general body of text, supported by editing and comments from her supervisors. F. Huysmans acted as promotor and daily supervisor, guiding Kleijnen in preparing the thesis by regularly discussing the progress of the research project with her as well as by providing her with feedback on the research process and the whole manuscript on a regular basis. Supervisor E. Elbers provided comments on the drafts of the articles/chapters, informing Kleijnen about the desirable changes and additions to be made. Co-supervisor R. Ligtvoet was mainly concerned with the process of data analysis but also commented on the articles/chapters. Discussions with all supervisors informed the research questions and interpretation of the results. The literature study and data collection for the empirical studies were carried out by Kleijnen. The statistical analyses were performed by Kleijnen in close contact with Ligtvoet and under supervision of Huysmans. On the basis of valuable feedback from Huysmans, Elbers, and Ligtvoet, Kleijnen rewrote and revised this thesis manuscript into its current form. Chapters 2, 3, 4, and 5 are based on journal articles with the PhD candidate as the first author.

Chapter 2

Kleijnen, E., Huysmans, F., & Elbers, E. (2015). The role of school libraries in reducing learning disadvantages in migrant children: A literature review. *SAGE Open*, 5(2), 1-16. doi:10.1177/2158244015580369

Chapter 3

Kleijnen, E., Huysmans, F., Ligtvoet, R., & Elbers, E. (forthcoming). Effect of a school library on the reading attitude and reading behavior in non-Western migrant students. *Journal of Librarianship and Information Science*. doi:10.1177/0961000615622560

Chapter 4

Kleijnen, E., Huysmans, F., Ligtvoet, R., & Elbers, E. (submitted for publication). Effect of a school library on the reading and language skills in non-Western migrant students.

Chapter 5

Kleijnen, E., Huysmans, F., Ligtvoet, R., & Elbers, E. (submitted for publication). Relationships between the reading attitude, reading behavior, and reading and language skills in non-Western migrant students.



ROUTE TO READING

PROMOTING READING THROUGH A SCHOOL LIBRARY: EFFECTS FOR NON-WESTERN MIGRANT STUDENTS

Ethnic inequality in school performance is an urgent issue in the Netherlands, as in other Western countries. Primary school students with a non-Western migrant background – who make up a considerable proportion of the total Dutch school population – often face educational disadvantages, especially in language and reading proficiency. This is a cause of concern considering the importance of good language and reading skills for participating successfully in society. The national program *the Library at School* (“de Bibliotheek op School”), which comprises a structural cooperation between public libraries and schools, seeks to promote reading among students by creating high quality libraries in schools and improving the collaboration between public libraries and schools. The program is directed at promoting reading enjoyment, encouraging children to read more, stimulating the students’ reading and language development, and improving their information skills. Although ample studies – mostly conducted outside the Netherlands – have addressed the impact of school libraries, revealing positive outcomes, there is still a lack of clarity as to the effects on children from migrant groups in the Netherlands.

The present research aimed at providing insight into the effects of an integrated library facility in a Dutch primary school’s curriculum on the reading attitude, reading behavior, and reading and language skills in students with a non-Western migrant background. This research consisted of a literature review (Chapter 2) and three empirical studies (Chapters 3, 4, and 5). For the empirical part, we conducted a longitudinal study with a quasi-experimental design, involving 143 students with a non-Western background (grades 2 to 6) of two Dutch primary schools: one with an integrated library facility (i.e., the experimental school, $n = 72$) and one without such a school library (i.e., the control school, $n = 71$). Central was a children’s library in a multicultural neighborhood in the city of Gouda in the west of the Netherlands. Data were gathered over three successive school years (2011/2012, 2012/2013, and 2013/2014), using questionnaires (i.e., the national Monitor the Library at School and additional surveys) and tests (i.e., nationally standardized tests from the pupil monitoring system devised by Cito, the National Institute for Educational Measurement). We first investigated whether the school library had an effect on the *reading attitude and reading behavior* of the students. Secondly, we analyzed whether the school library led to better *reading and language skills*. Thirdly, we focused on the *relationships* between the students’ *reading attitude, reading behavior, and reading and language skills*. When discussing the (effectiveness of the) school library, we basically refer to the school library concept as a whole, which comprises a broad collection, library visits, the presence of a reading and media coach, reading promotion lessons, and reading logs (see Appendix A).

LITERATURE REVIEW

The literature study, discussed in Chapter 2, aimed to pinpoint what was known and what was as

yet unknown about reducing learning disadvantages through school libraries. According to the literature, it has been established that access to books, as provided by school libraries, results in higher levels of reading. Given the positive relationship often suggested between reading behavior and proficiency in reading and language, school libraries are expected to have the potential to improve these skills. In line with this, a considerable amount of research conducted outside the Netherlands has shown that school libraries are related to better learning outcomes for students in general. Furthermore, it has been established that an increased access to books is related to a higher reading enjoyment, and school library users have been found to hold a more positive attitude toward reading than non-users. Studies conducted outside the Netherlands stress the importance of adequate school library staff and other attributes such as funding, flexible library access, and adequate collections. The relatively limited amount of research on school libraries in the Netherlands has also shown positive outcomes, such as more leisure reading among children, a higher reading comprehension level, and a more positive attitude toward books and reading as well as a growth in youth memberships and book loans.

Despite what we know from these previous studies on school populations in general, as yet little is known about the effects of school libraries’ reading promotion efforts on ethnic minority students in particular. To the best of our knowledge, there are no studies that explicitly focused on the impact of school libraries on migrant students in the Netherlands. Research conducted in the United States has suggested that “success factors” of school libraries apply to students of various racial/ethnic backgrounds, and minority student seem to benefit proportionally more from strong school library programs. However, it is not self-evident that these findings apply across different cultural and educational contexts. Moreover, literature that indirectly sheds light on the effects of school libraries on children with a migrant background is not unambiguous. On the one hand, studies have indicated that the home environment – which is usually not that favorable among migrant families in the Netherlands – is of utmost importance, suggesting only a limited impact of (interventions taking place at) other socializing institutions. On the other hand, there are studies suggesting that, besides parents, public libraries and schools do play an important role, and that these institutions can even compensate for a reader-unfriendly home climate. Given the hitherto ambiguous research results, it was not possible to draw firm conclusions about the effects of school libraries’ efforts on non-Western migrant students in particular.

EFFECTS ON READING ATTITUDE AND READING BEHAVIOR

The empirical study presented in Chapter 3 examined whether an integrated library facility in a Dutch primary school had an effect on the reading attitude and reading behavior of non-Western migrant students. On average, the students of both the experimental and control school had a quite positive reading attitude and read fairly often in their leisure time, as assessed through student questionnaires. The *reading attitude* scores on the *utilitarian subscale* were somewhat



higher than those on the *hedonic subscale*, meaning that the students considered reading somewhat more useful than enjoyable. Storybooks and comic books were the most popular reading materials at both schools, whereas picture books and poems and verses were least often read out of six different types of *reading materials*. Non-fiction (informative) books and magazines scored in between. With regard to *reading duration* and *diversity in reading preferences*, children of both schools reported reading on average approximately half an hour a day and they liked four to five different topics on average. Of the thirteen topics presented to them, the children most often preferred to read about sports, creepy things, friendship, animals, and humor.

The study demonstrated a positive effect of the school library on the utilitarian component of the students' reading attitude: Over time, students attending the experimental school considered reading more useful than students attending the control school. Although the experimental school students also considered reading more fun over time, this difference was not statistically significant. We were not able to detect an effect of the school library on the students' reading frequency, nor with respect to their reading duration and diversity in reading preferences. A possible explanation may follow from the fact that the experimental school students were not allowed to take home the school library books they borrowed during school hours.

With regard to the background characteristics of the children it was found for the reading frequency of the six types of reading materials taken together that at the experimental school, the reading frequency of older children increased more over time than that of younger children, whereas the opposite was true for the control school. Furthermore, we also found several direct effects of background factors on both the students' reading attitude and reading behavior. For instance, younger children had a more positive reading attitude and girls scored higher on the hedonic aspect than boys. There were also gender differences with respect to reading preferences and the reading frequency of the different types of reading materials, as well as an age difference in the reading frequency of magazines. The students' reading climate at home was found to be an important predictor of both their reading attitude and reading behavior, with children from families with a more reader-friendly home environment reporting more reading and a more positive attitude.

EFFECTS ON READING AND LANGUAGE SKILLS

Chapter 4 described our second empirical study, which examined whether the integration of a library facility in a Dutch primary school led to better reading and language skills in non-Western migrant students. The students of both the experimental school and the control school scored fairly low on nationally standardized tests assessing their vocabulary size, reading comprehension level, and spelling skills. The results showed a statistically significant positive effect of the school library program on the students' *vocabulary* level, with a higher increase in vocabulary test scores over time for the experimental school than for the control school. However, no effects were found

on the students' *reading comprehension* and *spelling* skills. The positive effect on the vocabulary scores may be related to the reading promotion lessons that were part of the school library program, incorporating components that are suggested to be positively related to vocabulary size, such as reading aloud to the children and creating a word web together. Moreover, when teaching world orientation subjects in class (e.g., history and geography), teachers of the experimental school more often read a book aloud than control school teachers. Perhaps it may also be argued that free reading in class, which happened at both schools, was more strongly related with the students' vocabulary size than with their reading comprehension level and spelling skills, as only their vocabulary scores increased over time regardless of the school.

With respect to the students' background characteristics, the results showed a main effect of age and language spoken at home on the students' skills. As the students progressed through primary school, their performance in reading comprehension and spelling declined compared to the national reference group. Students speaking Dutch at home, or Dutch together with another language, performed better on spelling than students only speaking in a non-Dutch language with their parents. Furthermore, the results showed that the reading comprehension skills of experimental school students growing up in lower educated families improved more over time than those of children from higher educated parents, whereas the opposite was found for control school students. The effects of the school library on the students' vocabulary level and spelling skills, though, did not differ for categories of parental educational level, nor for categories of gender, age, reading climate at home, and language spoken with parents.

RELATIONSHIPS BETWEEN READING ATTITUDE, READING BEHAVIOR, AND READING AND LANGUAGE SKILLS

Research has often shown that the central outcome variables discussed in our two previous studies are reciprocally related, suggesting an upward spiral of causality: Children who hold more positive attitudes toward reading will tend to read more, which translates to a higher reading and language ability. Strikingly, non-Western migrant students – in general as well as the ones involved in our study – report a quite positive reading attitude and read fairly often, although they attain quite low scores on tests assessing their reading and language skills. In our final empirical study (Chapter 5), we examined whether there were relationships between the students' reading attitude, reading behavior, and reading and language proficiency.

We found the children's *attitude toward reading* to be positively related to their *reading behavior*. Students who thought reading is fun and important were more likely to read more frequently and to spend more leisure time on reading. This was especially true for the reading frequency of storybooks. The hedonic component of reading attitude was more important for the students' reading behavior (and vice versa) than was the utilitarian aspect.

The relationships between the students' reading attitude and behavior on the one hand with



their reading and language proficiency on the other, however, were far less evident. With regard to the students' *reading attitude* and *reading and language skills*, we found that children with a higher reading comprehension and spelling level were more likely to consider reading a fun activity. However, after controlling for background factors most results were no longer significant. Furthermore, vocabulary scores were found to be unrelated to the students' reading attitude. Thus, a high or low language and reading ability did not necessarily imply a particularly positive or negative attitude among the students. Our findings with respect to the relationship between the students' *reading behavior* and *reading and language skills* showed that students with a larger vocabulary, and higher reading comprehension and spelling scores reported a higher reading frequency and duration, but most relationships were not statistically significant. We did find that better spellers tended to spend more time on leisure reading, and that students who read more minutes had larger vocabularies, although these significant relationships did not hold after taking into account several background factors. All in all, it was hard to explain variance in the students' language and reading proficiency. Several explanations were put forward, such as a certain language proficiency level that may be needed in order to benefit from reading individually at home, as well as a leisure reading environment at home that may not have been ideal.

GENERAL DISCUSSION

Apart from summarizing our main findings, the final chapter (Chapter 6) discussed limitations of the research project and its scientific and societal contribution, as well as implications for future research and practice. Besides several limitations noted around the sample and measurement instruments, it should be kept in mind that the implementation of the school library program in the experimental school could be improved. The library books borrowed during school hours were not allowed to be taken home, a decision made by the school management, while providing reading materials that can be taken home is an important aspect of the national program the Library at School.

In order to get a better understanding of the effects of reading promotion through a school library, for migrant students and students in general, future research should focus on the effects of an optimally implemented school library program. In line with this, future research could examine which aspects of school library programs influence the reading attitude, reading behavior, and reading and language skills. Moreover, it would be advisable to also include native students in the sample to compare the effectiveness of a school library for non-Western migrant children and native Dutch children. Future research could compare migrant students from different ethnic backgrounds as well. The finding that there was hardly any relationship between leisure reading and the students' language and reading skills also calls for more research.

This research underlined the importance of implementing a strong school library program for students with a non-Western background, including providing appropriate books that can be taken

home, the presence of a reading and media coach, and organizing reading promotion activities. Furthermore, our findings suggested that independent leisure reading, as assessed in our study, was not sufficient to significantly improve the reading and language skills in non-Western migrant children. Extra attention for (the most) disadvantaged students in education is and remains important – given that children may need a certain threshold language and reading proficiency in order for reading for pleasure to be effective – and attention should be paid to the 'quality' of the children's leisure reading experiences. Finally, our research stressed the importance of parents as partners for schools and libraries when it comes to reading promotion. Children with a non-Western background are more likely to grow up in less reader-friendly families than native Dutch children. Opportunities should be taken to strengthen the students' reading climate at home and it is advisable to structurally incorporate this element in the school library program. Overall, this research project has contributed to the research literature in different scientific fields and it has provided implications for future research and practice, which can be used to implement more effective reading promotion efforts.



In Nederland bestaat er etnische ongelijkheid in schoolprestaties. Basisschoolleerlingen met een niet-westerse achtergrond – die een aanzienlijk deel uitmaken van de Nederlandse schoolpopulatie – kampen vaker met onderwijsachterstanden dan autochtone en westers allochtone kinderen, vooral op het gebied van taal en lezen. Dit is zorgelijk gezien het belang van een goede taal- en leesvaardigheid voor een succesvolle deelname aan de maatschappij. Het nationale programma *de Bibliotheek op school*, bestaande uit een structurele samenwerking tussen openbare bibliotheken en scholen, heeft als doel het lezen onder leerlingen te bevorderen. Binnen dit programma wordt gewerkt aan het creëren van kwalitatief goede schoolbibliotheken en het verbeteren van de samenwerking tussen scholen en bibliotheken. De interventie richt zich op het stimuleren van lezen en leesplezier, het bevorderen van taal- en leesvaardigheid en het verbeteren van informatievaardigheden. Er is reeds (voornamelijk buitenlands) onderzoek gedaan naar de invloed van schoolbibliotheken, waar positieve bevindingen uit naar voren zijn gekomen. Over de effecten voor kinderen van migrantengroepen in Nederland is echter nog weinig bekend.

Dit onderzoek richt zich op de vraag of een in een basisschool geïntegreerde bibliotheekvoorziening bij niet-westerse migrantenleerlingen leidt tot meer vrijetijdslezen, een positievere houding ten aanzien van lezen, en een betere taal- en leesvaardigheid. Het onderzoek bestaat uit een uitgebreide literatuurstudie (hoofdstuk 2) en drie empirische studies (hoofdstuk 3, 4 en 5). Voor het empirische gedeelte is er longitudinaal onderzoek uitgevoerd met een quasi-experimenteel design, waaraan 143 leerlingen (groep 4 tot en met 8) met een niet-westerse achtergrond hebben deelgenomen. Deze leerlingen waren afkomstig van twee Goudse basisscholen: een school met een geïntegreerde bibliotheekvoorziening (de experimentele school, $n = 72$) en een school zonder deze voorziening (de controleschool, $n = 71$). De dataverzameling vond plaats tijdens drie opeenvolgende schooljaren: 2011/2012, 2012/2013 en 2013/2014. Gegevens zijn verzameld met behulp van vragenlijsten (Monitor de Bibliotheek op school en aanvullende vragenlijsten) en metingen uit het Cito-leerlingvolgsysteem, voor het gebruik waarvan toestemming is verleend door de ouders van de kinderen.

We hebben ten eerste onderzocht of de schoolbibliotheek een effect had op de *leesattitude* en het *leesgedrag* van de leerlingen. Ten tweede zijn we nagegaan of de schoolbibliotheek tot een betere *taal- en leesvaardigheid* heeft geleid. Ten derde hebben we ons gefocust op de *relaties tussen de leesattitude, het leesgedrag en de taal- en leesvaardigheid* van de leerlingen. Wanneer we spreken over (de effectiviteit van) de schoolbibliotheek, dan doelen we in feite op het schoolbibliotheekconcept als geheel, dat bestaat uit een uitgebreide collectie, bibliotheekbezoeken, leesbevorderingslessen, leeslogs en de aanwezigheid van een lees- en mediacoach (zie Appendix A).

LITERATUURSTUDIE

Het literatuuronderzoek, besproken in hoofdstuk 2, laat zien dat er reeds een behoorlijk aantal

studies heeft plaatsgevonden naar het effect van schoolbibliotheken. Het merendeel is in andere landen uitgevoerd, zoals de Verenigde Staten, Engeland en Australië, maar er is ook Nederlands onderzoek bekend. Enkele Nederlandse studies naar bibliotheken op scholen hebben op positieve uitkomsten gewezen, zoals meer vrijetijdslezen door kinderen, een positievere houding ten aanzien van boeken en hogere scores op begrijpend lezen. Veel buitenlandse studies hebben aangetoond dat schoolbibliotheken een positieve bijdrage leveren aan schoolprestaties. Tevens is er een positief verband gevonden met het leesplezier van leerlingen en blijkt toegang tot boeken samen te hangen met meer lezen. Buitenlands onderzoek wijst op belangrijke succesfactoren van schoolbibliotheken, zoals de aanwezigheid van goed gekwalificeerde bibliothecarissen, een grote en up-to-date collectie, voldoende financiering, samenwerking met leerkrachten en ruime toegang tot de bibliotheek.

Ondanks wat we weten uit eerder onderzoek naar leerlingpopulaties in het algemeen, blijkt er weinig bekend te zijn over de effecten van leesbevorderingsinspanningen vanuit schoolbibliotheken op migrantenleerlingen in het bijzonder. Voor zover bekend zijn er geen studies uitgevoerd waarin specifiek gekeken is naar de invloed van een schoolbibliotheek op kinderen met een niet-westerse achtergrond in Nederland. Onderzoek uitgevoerd in de Verenigde Staten suggereert dat succesfactoren van schoolbibliotheken gelden voor kinderen van verschillende etnische groepen. Ook wijst buitenlands onderzoek erop dat etnische minderheden wat betreft hun leesvaardigheid zelfs meer zouden profiteren van sterke bibliotheekprogramma's dan autochtone kinderen. Het is echter niet bekend of deze bevindingen ook gelden voor de Nederlandse context met zijn specifieke etnische groepen. Literatuur op het gebied van (lees) socialisatie door ouders, scholen en bibliotheken, die meer inzicht zou kunnen verschaffen in de mogelijke effecten van schoolbibliotheken voor niet-westerse migrantenkinderen in Nederland, is niet eenduidig. Aan de ene kant heeft onderzoek gesuggereerd dat de thuisomgeving, die het lezen meestal minder gunstig gezind is in migrantengezinnen, van het grootste belang is, waardoor er slechts een marginaal effect mogelijk zou zijn van (interventies die plaatsvinden via) andere socialiserende instituties. Aan de andere kant wijzen studies erop dat ook scholen en bibliotheken een belangrijke rol spelen en dat deze zelfs zouden kunnen compenseren voor een ongunstig (lees)klimaat thuis. Al met al zijn er op basis van eerder onderzoek dus geen harde conclusies te trekken over de effecten van leesbevordering via een schoolbibliotheek specifiek voor niet-westerse migrantenkinderen in Nederland.

EFFECTEN OP LEESATTITUDE EN LEESGEDRAG

In hoofdstuk 3 staat de empirische studie centraal waarin onderzocht is of een geïntegreerde bibliotheekvoorziening in een Nederlandse basisschool effect heeft op de *leesattitude* en het *leesgedrag* van leerlingen met een niet-westerse achtergrond. Uit de vragenlijsten kwam naar voren dat, gemiddeld gezien, leerlingen van zowel de experimentele als de controleschool een



behoorlijk positieve houding ten aanzien van lezen hadden en redelijk vaak lezen in hun vrije tijd. De leesattitude-scores op de *utilitaire subschaal* waren iets hoger dan de scores op de *hedonistische subschaal*. Dit betekent dat de leerlingen lezen nog iets nuttiger/belangrijker vonden dan dat zij er plezier aan beleefden. Op beide scholen waren leesboeken en stripboeken de meest populaire *leesmaterialen*, terwijl prentenboeken en gedichtjes en versjes het minst vaak werden gelezen. Informatieve boeken en tijdschriften scoorden er tussenin qua populariteit. Wat betreft de *leesduur* en *diversiteit in leesvoorkeuren* gaven de kinderen van beide scholen aan dat zij gemiddeld ongeveer een half uur per dag lezen en dat zij vier tot vijf verschillende onderwerpen leuk vonden om over te lezen. Van de dertien onderwerpen die de kinderen voorgelegd zijn, gaven de kinderen het vaakst aan graag te lezen over sport, griezelen, vriendschap, dieren en humor.

Het onderzoek laat een positief effect zien van de schoolbibliotheek op de utilitaire component van leesattitude: vergeleken met de leerlingen van de controleschool zijn de leerlingen van de experimentele school lezen belangrijker gaan vinden over de tijd heen. Hoewel de leerlingen van de experimentele school lezen ook leuker zijn gaan vinden, was dit verschil niet statistisch significant. We waren niet in staat om een effect van de schoolbibliotheek aan te tonen op de leesfrequentie van de leerlingen, noch op hun leesduur en diversiteit in leesvoorkeuren. Een mogelijke verklaring hiervoor is dat het de leerlingen van de experimentele school niet was toegestaan de onder schooltijd geleende boeken van de schoolbibliotheek ook mee naar huis te nemen.

In deze studie is ook gekeken naar de invloed van de achtergrondkenmerken van de kinderen. Zo vonden we voor de leesfrequentie van de zes verschillende typen leesmaterialen samengenomen dat op de experimentele school de leesfrequentie van oudere kinderen meer toenam over de tijd heen dan die van jongere kinderen, terwijl het tegenovergestelde gold voor de controleschool. We vonden ook een aantal directe effecten van achtergrondkenmerken op zowel de leesattitude als het leesgedrag van de leerlingen. Jongere kinderen hadden bijvoorbeeld een positievere leesattitude en meisjes scoorden hoger op het hedonistische aspect. Tevens waren er verschillen tussen jongens en meisjes wat betreft leesvoorkeuren en de leesfrequentie van de verschillende soorten leesmaterialen, evenals een verschil tussen jongere en oudere kinderen in de mate waarin tijdschriften gelezen werden. Het leesklimaat thuis, onder andere bestaande uit het (voor) leesgedrag van ouders en het praten over boeken met ouders, bleek een belangrijke voorspeller van zowel leesgedrag als leesattitude. Kinderen uit gezinnen met gunstiger leesklimaat gaven aan vaker te lezen en zij hadden een positievere houding ten aanzien van lezen.

EFFECTEN OP TAAL- EN LEESVAARDIGHEID

Hoofdstuk 4 doet verslag van de tweede empirische studie waarin gekeken is of een geïntegreerde bibliotheekvoorziening in een Nederlandse basisschool tot een betere taal- en leesvaardigheid leidt bij leerlingen met een niet-westerse achtergrond. De leerlingen van zowel de experimentele als controleschool scoorden behoorlijk laag op de citotoetsen waarin hun woordenschat,

niveau van begrijpend lezen en spellingvaardigheden zijn gemeten. Uit de analyses kwam een statistisch significant positief effect naar voren van het schoolbibliotheekprogramma op de *woordenschat* van de kinderen: de woordenschatcores van de leerlingen in de experimentele groep lieten een sterkere stijging zien dan die van de leerlingen van de controleschool. Voor *begrijpend lezen* en *spelling* is er echter geen effect van de bibliotheek waargenomen. Het positieve effect op de woordenschat van de kinderen zou in verband gebracht kunnen worden met de leesbevorderingslessen die deel uitmaakten van het schoolbibliotheekprogramma, bestaande uit elementen die positief gerelateerd lijken te zijn aan de omvang van de woordenschat, zoals voorlezen en het gezamenlijk creëren van een woordweb. Bij wereldoriënterende onderwerpen (zoals de zaakvakken geschiedenis en aardrijkskunde) lazen de leerkrachten van de experimentele school vaker voor dan de leerkrachten van de controleschool, wat eveneens een verklaring kan zijn. Verder zou wellicht nog geredeneerd kunnen worden dat vrij lezen in de klas, wat op beide scholen gebeurde, sterker gerelateerd was aan de grootte van de woordenschat van de leerlingen dan aan hun niveau van begrijpend lezen en spelling. Immers gingen alleen woordenschatcores van de leerlingen vooruit, ongeacht de school waarop zij zaten – zij het sterker op de experimentele school.

Bij de achtergrondkenmerken van de kinderen zagen we een hoofdeffect van leeftijd op de prestaties van de kinderen, alsmede een hoofdeffect van de taal die kinderen met hun ouders spraken. De prestaties op het gebied van begrijpend lezen en spelling namen af ten opzichte van de nationale referentiegroep naarmate de leerlingen ouder werden. Leerlingen van wie de voertaal thuis Nederlands was, dan wel Nederlands en nog een andere taal, presteerden beter op het gebied van spelling dan leerlingen die alleen in een andere taal dan het Nederlands met hun ouders spraken. De resultaten lieten ook zien dat op de experimentele school de begrijpendleescores van kinderen met lager opgeleide ouders sterker stegen dan de scores van kinderen met hoger opgeleide ouders, terwijl het tegenovergestelde gevonden werd op de controleschool. Het effect van de schoolbibliotheek op de woordenschat en spellingvaardigheid van de kinderen verschilde daarentegen niet naar opleidingsniveau van de ouders, noch naar sekse, leeftijd, leesklimaat thuis en de taal die met ouders wordt gesproken.

RELATIES TUSSEN LEESATTITUDE, LEESGEDRAG EN TAAL- EN LEESVAARDIGHEID

Eerder onderzoek heeft gesuggereerd dat er tussen de afhankelijke variabelen die centraal stonden in de twee zojuist besproken empirische studies een wederkerige relatie bestaat, wijzend op een opwaartse spiraal van causaliteit: kinderen die een positievere houding hebben ten aanzien van lezen, zijn geneigd meer te lezen, wat zich vertaalt in een betere taal- en leesvaardigheid, met een positievere leeshouding tot gevolg, en zo verder. Opvallend is dat niet-westerse migrantenkinderen – over het algemeen en de leerlingen betrokken in onze studie – tamelijk vaak zeggen te lezen en een behoorlijk positieve leesattitude rapporteren, terwijl zij relatief lage



scores behalen op testen die hun taal- en leesvaardigheid meten. In onze laatste empirische studie (hoofdstuk 5) hebben we dan ook onderzocht of er relaties bestaan tussen de leesattitude, het leesgedrag en de taal- en leesprestaties van de niet-westerse migrantenleerlingen.

Uit de analyses bleek dat de *leesattitude* van de leerlingen positief samenhangt met hun *leesgedrag*. Kinderen die lezen leuk en belangrijk vonden, waren geneigd om vaker te lezen en meer tijd aan lezen te besteden. Dit gold vooral voor de leesfrequentie van leesboeken. De hedonistische component van leesattitude was een belangrijkere voorspeller voor het leesgedrag van de kinderen (en vice versa) dan de utilitaire component.

Echter, de relaties tussen de houding ten aanzien van lezen en het leesgedrag van de leerlingen aan de ene kant met hun taal- en leesvaardigheid aan de andere kant waren aanzienlijk minder duidelijk. Wat betreft de *leesattitude* en de *taal- en leesprestaties* van de kinderen vonden we dat leerlingen met hogere scores op het gebied van begrijpend lezen en spelling meer geneigd waren om lezen als een plezierige activiteit te beschouwen. Nadat er ook rekening gehouden was met achtergrondkenmerken waren de meeste resultaten echter niet langer significant. Verder bleek de omvang van de woordenschat niet gerelateerd te zijn aan de leesattitude van de leerlingen. Dus een hoge of lage taal- en leesvaardigheid impliceerde niet per se een positieve dan wel negatieve houding ten aanzien van lezen. Onze bevindingen met betrekking tot de relatie tussen *leesgedrag* en *taal- en leesprestaties* lieten zien dat leerlingen met een grotere woordenschat en hogere scores op begrijpend lezen en spelling frequenter en langer zeiden te lezen. De meeste relaties waren echter niet statistisch significant. Wel vonden we dat betere spellers geneigd waren om meer tijd te besteden aan vrijetijdslezen en dat kinderen die langer lazen een grotere woordenschat hadden, alhoewel deze significante relaties niet overeind bleven wanneer er ook gecontroleerd werd voor verschillende achtergrondkenmerken. Al met al was het moeilijk om variantie te verklaren in de taal- en leesvaardigheid van de leerlingen. Verschillende verklaringen zijn hiervoor geopperd, zoals een bepaald niveau van taalvaardigheid dat nodig zou kunnen zijn om te kunnen profiteren van individueel vrijetijdslezen, evenals een leesomgeving thuis die mogelijk niet optimaal was.

ALGEMENE DISCUSSIE

In het laatste hoofdstuk (hoofdstuk 6) zijn niet alleen de belangrijkste bevindingen samengevat, maar zijn ook de beperkingen en (wetenschappelijke en maatschappelijke) bijdrage van het onderzoeksproject besproken, evenals implicaties voor verder onderzoek en de praktijk. Zo waren er enkele beperkingen omtrent de steekproef en meetinstrumenten. Ook zou het schoolbibliotheekprogramma op de experimentele school verbeterd kunnen worden. De kinderen mochten de onder schooltijd geleende bibliotheekboeken niet mee naar huis nemen. Deze beslissing was door de schoolleiding genomen, hoewel het beschikbaar stellen van leesmaterialen die mee naar huis genomen kunnen worden een belangrijk aspect is van het nationale programma de Bibliotheek op school.

Om een beter beeld te krijgen van de effecten van leesbevordering via een schoolbibliotheek, voor migrantenleerlingen en leerlingen in het algemeen, zou toekomstig onderzoek zich kunnen richten op effecten van een optimaal geïmplementeerd schoolbibliotheekprogramma. Hierbij zou ook onderzocht kunnen worden welke aspecten van een dergelijk programma invloed hebben op de leesattitude, het leesgedrag en de taal- en leesvaardigheid van kinderen. Verder zou het wenselijk zijn om ook autochtone kinderen te betrekken in toekomstig onderzoek om na te gaan of de effectiviteit van een schoolbibliotheek verschilt tussen niet-westerse migrantenleerlingen en autochtone kinderen. In het huidige onderzoek was het aantal kinderen met een autochtone Nederlandse achtergrond te beperkt om mee te kunnen nemen in de analyses. Ook zouden migrantenleerlingen van verschillende etnische achtergronden met elkaar vergeleken kunnen worden in verder onderzoek. De bevinding dat er amper een relatie was tussen vrijetijdslezen en de taal- en leesprestaties van de leerlingen vraagt, gezien bevindingen uit eerdere studies die een positieve relatie lieten zien, ook om nader onderzoek.

Dit onderzoek onderstreept het belang van het implementeren van een sterk schoolbibliotheekprogramma voor leerlingen met een niet-westerse achtergrond. Hierbij kan onder andere gedacht worden aan het zorgen voor geschikte boeken die mee naar huis genomen kunnen worden, de aanwezigheid van een lees- en mediacoach en het organiseren van leesbevorderingsactiviteiten. Onze bevindingen duiden er ook op dat zelfstandig vrijetijdslezen, zoals gemeten in dit onderzoek, onvoldoende was om de taal- en leesvaardigheid van de kinderen significant te verbeteren. Extra aandacht voor achterstandsleerlingen is en blijft belangrijk – zeker aangezien kinderen een bepaald niveau van taal- en leesvaardigheid nodig zouden kunnen hebben voordat vrijetijdslezen effectief is. Aandacht zou verder uit moeten gaan naar de ‘kwaliteit’ van de leeservaringen van de kinderen. Tot slot benadrukt ons onderzoek het belang van ouders als belangrijke partners voor scholen en bibliotheken in het kader van leesbevordering. Kinderen met een niet-westerse achtergrond hebben een grotere kans om op te groeien in een minder ‘lees-vriendelijk gezin’ dan autochtone kinderen. Er zou dan ook actie ondernomen moeten worden om het leesklimaat van de kinderen thuis te versterken. Het is aan te raden om hier structureel aandacht aan te besteden in een schoolbibliotheekprogramma. Al met al heeft dit onderzoek bijgedragen aan de onderzoeksliteratuur in diverse wetenschappelijke disciplines en heeft deze studie gezorgd voor implicaties voor toekomstig onderzoek en praktijk die gebruikt kunnen worden voor de implementatie van effectievere leesbevorderingsprojecten.

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