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Citation

Boerma, I. E., Mol, S. E., & Jolles, J. (2018). Parents adjust the quality of their home literacy environment to the reading interest of their third to sixth graders. *Parenting-Science And Practice*, 18(4), 243-261. doi:10.1080/15295192.2018.1524243

Version: Not Applicable (or Unknown)

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Note: To cite this publication please use the final published version (if applicable).



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To cite this article: Inouk E. Boerma, Suzanne E. Mol & Jelle Jolles (2018) Parents Adjust the Quality of Their Home Literacy Environment to the Reading Interest of Their Third to Sixth Graders, *Parenting*, 18:4, 243-261, DOI: [10.1080/15295192.2018.1524243](https://doi.org/10.1080/15295192.2018.1524243)

To link to this article: <https://doi.org/10.1080/15295192.2018.1524243>



Published online: 22 Oct 2018.



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Parents Adjust the Quality of Their Home Literacy Environment to the Reading Interest of Their Third to Sixth Graders

Inouk E. Boerma, Suzanne E. Mol, and Jelle Jolles

SYNOPSIS

Objective. The current home literacy activities that parents of children in Grade 3–6 (aged 6.90–13.40 years) engaged in were examined, in relation to parents' and children's perceived reading interest and the number of books at home. **Design.** A survey study was carried out among 452 parents. Subsequently, 89 children in Grades 3 and 4 completed a questionnaire about their reading interest. **Results.** The frequency of home literacy activities declines between Grades 3 and 6. When parents perceive their child as an interested reader, they engage in more frequent home literacy activities, even when they are not interested readers themselves. The frequency of the activities predicts children's self-reported reading interest in Grades 3 and 4, whereas amount of books at home and parents' own reading interest do not seem to explain any additional variance. **Conclusion.** Parents should be made aware of the importance of engaging in home literacy activities with their older child because these activities can still play a role in their child's reading interest.

INTRODUCTION

Children usually become familiar with reading and writing long before formal instruction starts. At home, parents can engage in different kinds of literacy activities with their children and surround them with books, which can be considered aspects of the home literacy environment (e.g., Burgess, Hecht, & Lonigan, 2002; Tichnor-Wagner, Garwood, Bratsch-Hines, & Vernon-Feagans, 2015; Van Steensel, 2006; Yeo, Ong, & Ng, 2014). In addition, parents can serve as a positive source of identification to their children by reading books themselves (e.g., Gonzalez-DeHass, Willems, & Holbein, 2005; Notten & Kraaykamp, 2010; Yeo et al., 2014). Many previous studies have shown that children who develop in a rich home literacy environment perform better on language and reading tasks (e.g., Bus, Van IJzendoorn, & Pellegrini, 1995; Mol & Bus, 2011). Some other studies have related the home literacy environment to children's reading habits and enjoyment (i.e., reading interest, see Dobbs-Oates, Pentimonti, Justice, & Kaderavek, 2015), and they have found positive results as well, both for preschoolers and for children in higher primary school grades (e.g., Baker & Scher, 2002; DeBaryshe, 1995; Gottfried, Schlackman, Gottfried, & Boutin-Martinez, 2015; Yeo et al., 2014). However, most of the studies that have been performed thus far have only taken the home literacy environment during preschool years in account, instead of

primary school children's current home literacy environment. In the study described in this paper, we examine the home literacy environment of third to sixth graders to better understand how parents are involved in supporting upper primary school children's reading interest at present.

The home literacy environment is considered to be a multifaceted construct that consists of a variety of home literacy activities, resources, and attitudes. First, it consists of the various home literacy activities that parents and children engage in together, such as shared reading, talking about books, and library visits (e.g., Burgess et al., 2002; Tichnor-Wagner et al., 2015). Second, parents' literacy resources, especially the amount of books at home, contribute to the quality of the home literacy environment (e.g., Burgess et al., 2002; Katzir, Lesaux, & Kim, 2009). Finally, children's home literacy environment is determined by parental beliefs and attitudes about reading, and parental reading habits (e.g., Phillips & Lonigan, 2009; Tichnor-Wagner et al., 2015; Yeo et al., 2014). All three aspects of the home literacy environment are taken into account in the current study, yet our main focus is on the home literacy activities.

Three Aspects of the Home Literacy Environment

The home literacy activity that has received the most attention in previous home literacy environment studies is shared reading. Many studies on parent-child book reading have found small to medium effect sizes for the relation between shared reading and a variety of language and emergent literacy measures in young children (Bus et al., 1995; Mol & Bus, 2011; Scarborough & Dobrich, 1994). More specifically, children who are exposed to home literacy activities that focus on the reading process itself ("high priority" activities, such as shared reading) and that require active participation of the child are more likely to have higher language and literacy skills than children who are involved in "passive" activities that are less related to reading, such as storytelling without books (Burgess et al., 2002; Van Steensel, 2006). Gottfried et al. (2015) even showed that spending time reading before the age of three seemed to lay a foundation for educational success across the academic lifespan. In contrast, other studies reported no or only small effects when the longitudinal effects of early home literacy environment on language and literacy skills of older children were examined (e.g., Evans, Shaw, & Bell, 2000; Hood, Conlon, & Andrews, 2008; Manolitsis, Georgiou, & Parrila, 2011).

As children get older and start reading more independently, parental involvement in their children's reading appears to decline (e.g., Hill & Taylor, 2004; Huysmans, 2013; Izzo, Weissberg, Kasprow, & Fendrich, 1999; Klauda, 2009). Due to information at schools, national reading campaigns, and family literacy programs, most parents are aware of the importance of reading with young children (e.g., Mol, Bus, De Jong, & Smeets, 2008). Yet less attention seems to be devoted to the benefits of a rich home literacy environment for older children. However, it is likely that older children can be supported as well by their parents or siblings to become or remain enthusiastic readers by engaging in activities that require active participation such as talking about the books children are reading or providing help with selecting interesting reading materials (Klauda, 2009). Not much is known, however, about which literacy activities are part of older children's home literacy environment.

It is known that older children benefit from living in a house with many books (e.g., Evans, Kelley, & Sikora, 2014; Evans, Kelley, Sikora, & Treiman, 2010; Park, 2008). These literacy resources can be considered children's "physical" home literacy environment (e.g., Burgess et al., 2002; Bus et al., 1995; De Jong & Leseman, 2001; Katzir et al., 2009; Leseman & De Jong, 1998; Scarborough & Dobrich, 1994). An international comparative study among fourth graders showed that the amount of books at home was significantly related to children's reading comprehension (Park, 2008). Other studies have shown positive relations between the amount of books at home and other aspects of educational attainment, such as higher performance in mathematics and science (Wößmann, 2003), and graduating from university (Evans et al., 2014, 2010). These relations were found even after controlling for parental education, implying that children's academic success can be fostered by having access to books at home regardless of their parents' level of education.

Parents' reading attitude, beliefs, and habits contribute to children's home literacy environment as well. It has been shown that children whose parents are enthusiastic about reading are more interested in reading themselves and have a more positive reading self-concept (e.g., Baker & Scher, 2002; DeBaryshe, 1995; Weigel, Martin, & Bennett, 2006; Yeo et al., 2014). Parents who are interested in reading probably convey their reading enthusiasm to their children both by being a reading role model and by engaging in many literacy activities with their children (Baker & Scher, 2002). However, some studies seem to indicate that parents' reading interest is not or hardly associated with children's early literacy skills (e.g., Foy & Mann, 2003; Payne, Whitehurst, & Angell, 1994). It is not yet clear whether it is necessary for parents to be interested readers themselves in order to raise children who are willing to read independently.

In the current study, we aim to examine which home literacy activities parents engage in with their third to sixth graders. We will specifically consider differences in the frequency in which children from different grades in Dutch primary schools are exposed to each activity. Furthermore, the role of the other two aspects of the home literacy environment, i.e., the amount of books at home and parents' reading interest, are examined as predictors of parents' involvement in home literacy activities in this study. Parents who own more books and who are more interested in reading themselves will probably provide more opportunities for their children to experience and enjoy printed materials. Therefore, we expect that they will engage in more home literacy activities with their children. Furthermore, we aim to examine whether the quality of the home literacy environment plays a role in children's own reading interest.

The Relation between the Home Literacy Environment and Children's Reading Interest

Individual differences in children's reading are likely to increase as children get older because of the process of reciprocal causation (Mol & Bus, 2011; Stanovich, 1986). According to this model, children who enjoy reading from an early age read more frequently and are more likely to continue their leisure reading routine. That is, children from rich home literacy environments start school with more language and literacy knowledge, which will make it easier for them to learn how to read. They will

be more willing to engage in reading activities, so that they have more opportunities to improve their reading skills, which will contribute to their reading enjoyment and reading skills even more. In other words, they enter a positive reading spiral. Children from a less stimulating home literacy environment, on the other hand, might not read much, which will more likely lead to a negative reading spiral so that their reading skills and interest will decrease.

Reading interest is closely related to the concept of reading attitude, which can be described as acquired predispositions (through social and personal beliefs, and previous experiences) to respond positively or negatively to reading activities (e.g., McKenna, Conradi, Lawrence, Jang, & Meyer, 2012; Sainsbury & Schagen, 2004). It has both an emotional (enjoyment) and a behavioral (frequency of engagement) aspect (Dobbs-Oates et al., 2015). Therefore, in the current study, we have examined children's perceived reading interest by using a parental questionnaire with items that tap into both of these aspects. Children's self-reported reading interest was examined by using a reading attitude questionnaire on children's willingness to engage in recreational reading (McKenna & Kear, 1990, see Method).

To date, most longitudinal studies support the importance of a high-quality home literacy environment in early childhood for supporting children's reading interest. For example, children who are exposed to storybooks in kindergarten are more likely to be frequent readers in Grade 4 (Sénéchal, 2006). Furthermore, the average time that parents spent reading to a young child (of between 15 and 60 months old) had a positive direct effect on reading motivation in childhood and adolescence, whereas the availability of reading materials did not contribute (Gottfried et al., 2015). However, since most studies on this topic have been focusing on the home environment of younger children, it is not yet known what happens once older children are in this positive (or negative) reading spiral, and whether the quality of their current home literacy environment affects their reading interest at present.

The reciprocal model of causation seems to suggest that children who enter a negative or positive reading spiral will remain in either a negative or positive spiral once they have learned to read independently. It seems more likely, though, that the quality of the home literacy environment remains important for continuing or increasing the reading interest of children in the upper grades of primary school (see Klauda, 2009 for an interesting review on this topic). One hypothesis is that parents who aim to support their children's reading enthusiasm will adjust their literacy activities in such a way that these match their children's (perceived) reading interest (Gonzalez-DeHass et al., 2005). More specifically, parents may particularly engage in literacy activities with their child when they observe that their child likes to read. This can enhance their child's reading interest even more (Gonzalez-DeHass et al., 2005). Studies among preschoolers have shown that children's interest in reading, as perceived by their parents, was indeed related to the frequency of home literacy activities (e.g., Bracken & Fischel, 2008; Lyytinen, Laakso, & Poikkeus, 1998; Weigel et al., 2006). On the other hand, studies that use child reports provide mixed results. A study among kindergarten children found no relation between children's self-reported reading interest and home literacy activities (Frijters, Barron, & Brunello, 2000), whereas a study among third graders found a positive relation (Verhoeven & Van Elsäcker, 2016). In our study, in contrast, we consider both parental and child reports to examine whether the home literacy environment (as reported by parents) may contribute to children's self-

reported reading interest. In order to examine children's self-reported reading interest, we select a representative subsample of third and fourth grade children whose parents participated in our larger study. The selected children were tested individually.

Furthermore, we examine the relations between parents' reading interest and children's perceived reading interest on the one hand, and the home literacy activities on the other hand. Parents who are interested readers themselves may be better able to stimulate their child's reading interest because they are more likely to be familiar with appropriate books and activities that match their child's reading level and (general) interests. In addition, when parents perceive that their child is interested in reading, this might fuel their own willingness to engage in more home literacy activities (Gonzalez-DeHass et al., 2005). Not much is yet known, however, about the consequences of having parents who are not interested in reading themselves in our age group. It might be that these parents engage in fewer home literacy activities, have fewer books, and are a negative reading role model to their children. This could be detrimental for primary school children's reading interest. A study among preschoolers showed that parents' own reading interest was a more important factor than children's perceived reading interest in predicting print-concept knowledge (Dobbs-Oates et al., 2015). Older children, however, might be more explicit in expressing their reading interest and this might lead parents to adjust their home literacy environment to their child's reading interest rather than their own. If this is indeed the case, our study should show that parents engage in home literacy activities when they perceive that their child is interested in reading, regardless of their own reading interests. We will look into this interplay by examining both parents' perceptions of their children's reading interest, and their own reading interest in relation to the home literacy activities that they engage in.

Current Study

In the study presented here, we examine the current home literacy environment of third to sixth graders in the Netherlands. That is, we examine the home literacy activities that parents of children in the upper grades of primary school engage in and will also look at the amount of books at home and at parental reading interest. Furthermore, we examine whether parents adjust their home literacy activities to their perception of their child's reading interest and/or to their own reading interest. We hypothesize that parents will frequently engage in home literacy activities when they perceive that their children are interested readers, even when they are not interested in reading themselves. We hypothesize that parents will frequently engage in home literacy activities when they are interested readers themselves, and that even more home literacy activities will take place when parents perceive that their child is interested in reading as well.

Finally, we relate the home literacy environment to children's self-reported reading interest. For this part of the study, we select children from the two lowest grades in our sample, i.e., Grade 3 and 4, because we expect more variation in parental involvement for younger than for older children. It is generally believed that parents are more involved in the life of younger children, and younger children are more influenced by parental values than older children (Jeynes, 2007; Stevenson & Baker, 1987). Hence, we involve multiple respondents in our study as we consider both parent and child

reports to shed more light on children's home literacy environment in relation to both parents' and children's (perceived and self-reported) reading interest.

We seek to answer the following research questions:

1. Which home literacy activities do parents engage in with their third-to-sixth grade children and are there differences between grades?
2. How do parents' own and children's perceived reading interest play a role in the frequency of the home literacy activities?
3. What is the relation between the home literacy environment of third and fourth graders and children's self-reported reading interest?

METHOD

Procedure

This study consisted of two phases. In the first phase, all parents with a child in Grades 3–6 in the five participating schools received a questionnaire. Parents were free to decide whether or not to complete the questionnaire and to return it at school. Questionnaires were collected by the classroom teacher and then handed to the researchers. In the second phase, we selected children from Grades 3 and 4, whose parents had completed the parental questionnaire, to participate in an individual test session. The parents of these children received an information letter and a consent form to give active consent for participation of their child. We selected children from all five participating schools. Care was taken to select a sample that was representative of the full sample of participants. That is, the subsample had comparable distribution of child's age and gender, and of parental education as the third and fourth graders in the full data sample (see Phase 2: Participants).

Phase 1: Parental Questionnaires

Participants. In the first phase of the study, 452 parents participated. These parents were asked to complete a questionnaire about their son ($n = 228$) or daughter ($n = 224$). Their children attended one of the following grades: Grade 3 ($n = 124$, 52.4% boys), Grade 4 ($n = 119$, 47.1% boys), Grade 5 ($n = 106$, 52.8% boys), or Grade 6 ($n = 103$, 49.5% boys). Children were on average 10.49 years old ($SD = 1.26$, $range = 6.90$ – 13.40 years). The questionnaires were distributed at five mainstream primary schools in the south of the Netherlands. Each school contributed between 8.6% and 40.7% to the total amount of participants. Differences in participation rate can be attributed to differences in school size, enthusiasm of the parents to respond to the questionnaire, and encouragement of the school teachers to hand in the questionnaires.

Most questionnaires were completed by the mothers ($n = 386$) or fathers ($n = 55$). The remaining questionnaires were completed by someone else ($n = 9$), for example, by a caregiver or by both parents together, and we had two missing values (.4%). In this paper, we will use both "respondent" and "parent" to refer to the respondent, even though not all respondents were the children's (biological) parents.

Demographics. We asked for the highest educational level of the person who completed the questionnaire and categorized the answers according to the classification of the Center for Statistics Netherlands (2013). In our sample, 14.6% ($n = 66$) had a low educational level, 39.8% ($n = 180$) had finished an education at intermediate level, and 41.6% ($n = 188$) had a high educational level (4.0% missing values). To control for children's socioeconomic status, we treated the respondents' education as a covariate in our analyses.

Home literacy environment. Parents responded to questions and statements on a questionnaire that tapped into three aspects of the home literacy environment, i.e., the literacy activities that they engaged in with their children, the amount of books they had at home, and their own reading interest.

Home literacy activities. The questionnaire included nine items (seven questions and two statements) that tapped into a variety of home literacy activities that are considered important for (younger) children according to existing literature (e.g., Burgess et al., 2002; Phillips & Lonigan, 2009; Yeo et al., 2014) and questionnaires used in international student assessment (i.e., PISA (OECD, 2008) and PIRLS (IEA, 2011)). All items were scored on a four-point Likert scale, ranging from "never" to "(almost) every day" for the questions, and from "strongly disagree" to "strongly agree" for the statements. The items are presented in Table 1. Items 2 and 3 were statements and the remaining items were questions.

For each parent a mean score was calculated based on these nine items (one missing value per parent was allowed), so that a higher score on this measure reflected more frequent home literacy activities. The mean score was 2.43 ($SD = .41$, $range = 1.33\text{--}3.56$) and the data showed a normal distribution. Cronbach's alpha of this scale was acceptable ($\alpha = .66$), and corrected item - total correlation coefficients were between .21 and .61 ($M = .34$, $SD = .12$, $Median = .34$). Even though not all coefficients are considered high, we have decided to keep all nine items and combine them into one scale, because (1) this is a first attempt to create a measure of home literacy activities for children in the upper grades of primary school, and (2) each activity in the scale was expected to be part of the same theoretical construct, based on previous literature with younger children (e.g., Burgess et al., 2002; Phillips & Lonigan, 2009; Yeo et al., 2014).

An independent samples *t*-test showed a marginally significant difference ($t(450) = -1.95$, $p = .052$) between home literacy activities reported by parents of boys ($M = 2.39$, $SD = .42$) and girls ($M = 2.47$, $SD = .40$). A marginally significant difference ($t(439) = 1.96$, $p = .051$) was also found between male ($M = 2.33$, $SD = .39$) and female ($M = 2.44$, $SD = .41$) respondents. Between schools no differences were found ($F(4,447) = 1.01$, $p = .399$). Therefore, child's gender and respondent's gender were included as covariates in our analyses.

Amount of books at home. Parents gave an indication of their physical home literacy environment. First they reported how many adult books they owned (news-papers and magazines excluded): (1) 0–10 books; (2) 11–25 books; (3) 26–100 books; (4) 101–200 books; (5) 201–500 books; and (6) over 500 books. A second question focused on the amount of children's books at home: (1) 0–10 books; (2) 11–25 books; (3) 26–50 books; (4) 51–100 books; and (5) over 100 books. A mean score was calculated for each parent

TABLE 1
Mean Scores and Standard Errors for the Nine Home Literacy Activities for the Overall Sample and per Grade

	Overall ^a	Grade 3	Grade 4	Grade 5	Grade 6	Grade differences ^b
1. Reading to the child in kindergarten	3.66 (.03)	3.67 (.06)	3.57 (.06)	3.65 (.07)	3.75 (.07)	
2. No idea what kind of reading material my child enjoys (reverse coded)	3.35 (.03)	3.30 (.06)	3.31 (.06)	3.35 (.06)	3.44 (.07)	
3. Child tells about the stories he/she is reading.	2.96 (.04)	2.88 (.07)	2.96 (.07)	3.05 (.07)	2.93 (.07)	
4. Talking about the book the child is reading	2.35 (.04)	2.58 (.07)	2.36 (.07)	2.26 (.08)	2.15 (.08)	3 > 5,6
5. Reading a book in the presence of your child	2.31 (.04)	2.25 (.09)	2.24 (.09)	2.32 (.10)	2.45 (.10)	
6. Child reads out loud at home	2.01 (.05)	2.54 (.09)	2.00 (.09)	1.93 (.10)	1.48 (.10)	3 > 4,5,6; 6 < 3,4,5
7. Taking the child to a library/book store	1.86 (.02)	1.82 (.05)	1.93 (.05)	1.88 (.05)	1.82 (.05)	
8. Reading to the child at present	1.71 (.05)	2.26 (.08)	1.67 (.08)	1.57 (.09)	1.24 (.09)	3 > 4,5,6; 4 > 6
9. Helping the child select a new book	1.67 (.03)	1.73 (.05)	1.75 (.05)	1.59 (.06)	1.59 (.06)	

Note. In these analyses, children's gender, respondents' gender, and respondents' education were entered as covariates. Furthermore, amount of books at home and parents' own reading interest were included in the model as well.

^a Overall scores are based on ANCOVA analyses ($N = 420$). Significant differences ($p < .05$) in home literacy activities: 1 > 2 > 3 > 4, 5 > 6, 7, 8, 9.

^b Grade scores and grade differences are based on MANCOVA analyses. Grade 3, $n = 112$; Grade 4, $n = 114$; Grade 5, $n = 99$; Grade 6, $n = 95$.

($M = 3.12$, $SD = 1.09$, $range = 1.00$ – 5.50). No missing values were allowed. Cronbach's alpha showed that these two items formed a reliable scale ($\alpha = .75$).

Parents' reading interest. Parents responded to five statements that tapped into their own reading habits and enjoyment on a four-point Likert scale ranging from 1 = totally disagree to 4 = totally agree: (1) I enjoy reading; (2) I exchange books with family and friends; (3) I read for a while before going to sleep; (4) I put a book in my bag when I leave home; and (5) I do not know how to find time to read (*reverse coded*). Throughout the rest of this paper, we will use the term "reading interest" to refer to reading habits and enjoyment.

A mean score was calculated for each parent, and a higher score reflected more positive reading habits. The mean score was 2.64 ($SD = .70$, $range = 1.00$ – 4.00). The scale had a good reliability ($\alpha = .79$). No differences were found between schools, $F(4,447) = 1.65$, $p = .162$.

Parents' perceptions of their children's reading interest. Three items were used to assess children's reading habits and enjoyment, i.e., their reading interest, according to their parents. Two statements were presented on a four-point Likert scale: (1) My child enjoys reading; (2) My child already reads so much at school that he/she does not want to read at home anymore (*reverse coded*). The third item was a question asking the parents how many books their child reads in a month (*none/1 or 2/3 or 4/5 or more*). A mean score was calculated per parent, and a higher score reflected a more positive perception of their children's reading interest. No missing values were allowed. The mean score on this scale was 2.74 ($SD = .68$, $range = 1.00$ – 4.00). Cronbach's alpha ($\alpha = .74$) showed a reliable scale. A one-way ANOVA showed no school differences on this variable, $F(4,447) = 1.33$, $p = .256$.

Phase 2: Individual Child Session

Participants. The second phase of our study consisted of individual sessions with a selection of the respondents' children. A total of 89 children participated in this phase (43 girls; 46 boys). Only children from Grades 3 (55.1%) and 4 (44.9%) were selected. Their mean age was 9.49 years ($SD = .72$, $range = 8.14$ – 11.29). We performed an independent samples *t*-test to examine whether the age of the children in the subset was different from the age of the third and fourth graders who were not selected, but this was not the case, $t(235) = .74$, $p = .461$. In the subset, 24.7% of the parents had a low educational level, 12.4% had an intermediate level, and 61.8% had a high educational level (one missing value). An independent samples *t*-test showed no differences in parental education between the 89 selected children and the rest of the sample, $t(114.97) = -1.19$, $p = .235$, nor with their peers in third and fourth grade who were not included, $t(144.82) = -1.86$, $p = .065$. Therefore, we assumed that our subset was a representative sample for the whole group of third and fourth graders.

Test session. All children were interviewed individually by a research assistant. First, she asked them some background questions, and then she submitted a questionnaire to assess their reading enjoyment.

Children's self-reported reading interest. We used 10 statements of the Elementary Reading Attitude Survey (ERAS; McKenna & Kear, 1990) to assess children's self-

reported reading interest. We used the recreational subscale (e.g., *How do you feel when you read a book on a rainy Saturday?*), because we were interested in recreational reading only. To ensure that children's understanding of the questionnaire items was not limited by their reading level, each statement was read to the children by the research assistant. Children were allowed to read along on the paper in front of them. Each statement was followed by four smileys on this paper, ranging from very negative (do not like it at all = 1) to very positive (like it a lot = 4). The children responded to each statement by choosing the smiley that best represented their feelings. Since the questionnaire was submitted in a one-on-one setting, we had no missing values.

A sum score was created so that a higher score reflects more reading enjoyment ($M = 27.71$, $SD = 4.54$, $range = 18.00\text{--}38.00$). Reliability analyses showed that the 10 statements in our sample formed a reliable scale ($\alpha = .73$).

RESULTS

Home Literacy Activities

To answer our first research question, we first examined which home literacy activities parents actually engaged in. As covariates children's gender, respondents' gender and education, amount of books at home and parents' own reading interest were included. Repeated-measures ANCOVA with Greenhouse-Geisser correction showed significant differences in the frequency of literacy activities, $F(6.04, 2501.90) = 21.87$, $p < .001$, $\eta_p^2 = .05$. In Table 1 the average score of each home literacy activity is listed. The three most frequently reported home literacy activities were (1) reading to the child in kindergarten, (2) being aware of the kind of reading material the child enjoys, and (3) having the child tell about the stories he/she is reading. Significant differences ($ps < .001$) were found between the frequency of each of these home literacy activities. The four least reported home literacy activities were (1) reading out loud at home by the child, (2) taking the child to a library/bookstore, (3) reading to the child at present, and (4) helping the child select a new book. These do not show significant differences in frequency between each other.

Next, we conducted a multivariate analysis of covariance (MANCOVA) to examine whether there were differences between grades in parents' self-reported home literacy activities, while taking into account children's gender, respondents' gender and parental education, as well as amount of books at home and parents' own reading interest. Wilk's lambda indeed showed an effect of grade on our nine home literacy activities together, $\lambda = .735$, $F(27, 1177.61) = 4.80$, $p < .001$, $\eta_p^2 = .10$. Univariate tests revealed that these grade differences were found in four home literacy activities in particular: (1) reading to the child at present, which showed both a difference between Grade 3 and all other grades ($ps < .001$), and between Grades 4 and 6 ($p = .002$); (2) reading out loud by the child, which showed both a difference between Grade 3 and all other grades ($ps < .001$), and between Grade 6 and all other grades ($ps \leq .007$); and (3) talking about books, which showed both a difference between Grades 3 and 5 ($p = .009$) on the one hand, and Grades 3 and 6 ($p \leq .001$) on the other hand. In all these results the frequency of the home literacy activity was higher for the lower grades compared to the higher grades.

Relation between Parents' and Children's Reading Interest, and Home Literacy Activities

To answer our second research question, we examined whether the interaction between parents' own reading interest and children's perceived reading interest predicted the home literacy activities that they engaged in. We used the PROCESS macro (Hayes, 2013), implemented in the statistical package SPSS (IBM Corp. Released 2015, version 23). In the model, we included home literacy activities as the dependent variable, parents' reading interest as the independent variable, and children's perceived reading interest as the moderator. Children's grade and gender, respondents' gender and parental education were added as covariates. We also included amount of books at home as a covariate to find out whether parents' and children's perceived reading interest would explain unique variance over and above the physical literacy environment.

We found a significant interaction between parents' own reading interest and children's perceived reading interest in predicting the frequency of engaging in home literacy activities, $b = -.07$, $t(425) = -2.21$, $p = .028$. The overall model explained 35.6% of variance in home literacy activities, $R^2 = .36$, $F(8,425) = 29.31$, $p < .001$. Of our covariates, only grade was significant, $b = -.09$, $t(425) = -6.07$, $p < .001$. Amount of books was not significant, $b = .03$, $t(425) = 1.72$, $p = .086$.

In Figure 1 the interaction is displayed. The three lines represent children's perceived reading interest one standard deviation above the mean (upper line), on average (middle line), and one standard deviation below the mean (lower line). All three conditional effects were significant ($ps < .001$). These effects reveal that parents who are interested in reading themselves and perceive that their children are also interested in reading, engage in home literacy activities most frequently. However, parents who are not interested in reading, yet perceive that their children are, engage

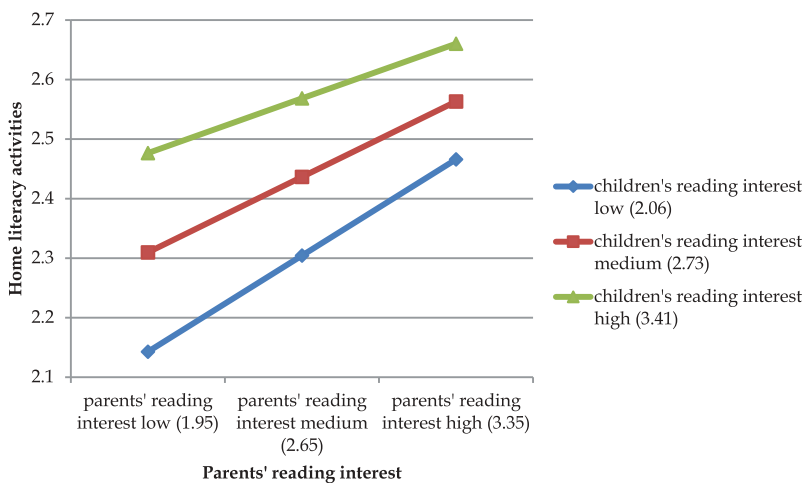


FIGURE 1.

The frequency of home literacy activities (y -axis) in relation to both parents' reading interest (x -axis), and children's reading interest (separate lines). For both parents' and children's reading interest, the values of the mean and one standard deviation below and above the mean are displayed.

in home literacy activities to the same extent as the reading-interested parents. Parents who are interested in reading, but whose children are not, engage in significantly fewer home literacy activities compared to families in which both parents and children are interested in reading. In homes where neither parents nor children are interested in reading, the fewest literacy practices are reported.

Relation between Home Literacy Environment and Children's Self-Reported Reading Interest

For the next phase of the study, 89 children whose parents had completed the parental questionnaire were selected to participate in an individual test session in which they completed the ERAS. First, we checked the relations between our variables of interest. Table 2 shows that the correlations between our variables of interest in our subsample ($n = 89$) are largely comparable to the correlations for the full sample ($N = 452$), so the subsample seems to be a representative subset of the full sample.

In the subsample, moderate relations were found between children's self-reported reading interest (ERAS) and children's reading interest as perceived by their parents, $r(87) = .43$, $p < .001$. We performed a multiple, stepwise regression analysis to examine which aspects of the home literacy environment predicted children's self-reported reading interest, while controlling for gender of the child, and their parents' gender and education (see Table 3). We did not include grade as a control variable anymore because only third and fourth graders were included, and we found no grade differences in their self-reported reading interest, $t(87) = .39$, $p = .699$. Because we were interested in the separate contribution of all three aspects of the home literacy environment, we entered home literacy activities in a first step, number of books in a second step, and parents' own reading interest in a third step of the multiple regression analysis.

First, providing home literacy activities significantly predicted children's self-reported reading interest, $\beta = .24$, $t(83) = 2.31$, $p = .023$, with the overall model explaining 14% of the variance, $F(4,83) = 3.48$, $p = .011$, $R_{adj}^2 = .10$. Child's gender was a significant covariate, $\beta = .25$, $t(83) = 2.39$, $p = .019$. Second, the amount of books

TABLE 2
Correlations between Home Literacy Activities, Parental Education, Parents' and Children's Perceived Reading Interest, and Children's Self-Reported Reading Interest

	Home literacy activities	Parental education	Parent's reading interest	Child's perceived reading interest	Amount of books at home	Child's self-reported reading interest
Home literacy activities	–	.16	.40***	.49***	.34***	.30**
Parental education	.08	–	.38***	.09	.73***	.06
Parent's reading interest	.39***	.20***	–	.21*	.48***	.19
Child's perceived reading interest	.45***	.13**	.22***	–	.15	.43***
Amount of books at home	.31***	.41***	.43***	.32***	–	.15

Note. Lower half of the table – zero-order correlations for the full sample ($N = 452$); upper half of the table – zero-order correlations for the subsample of individually tested third and fourth graders ($n = 89$). * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$.

TABLE 3
Hierarchical Multiple Regression Analysis Predicting Children's Self-Reported Reading Interest

	Child's self-reported reading interest		
	β - step 1 ^a	β - step 2 ^b	β - step 3 ^c
Child's gender	.25*	.25*	.25*
Respondent's gender	-.01	-.01	.01
Parental education	.08	.02	.01
Home literacy activities	.24*	.22*	.20 [†]
Amount of books at home		.08	.06
Parents' reading interest			.08

Note. * $p < .05$. [†] $p = .10$.

^a $R^2 = .14$; ^b $\Delta R^2 = .00$, $p = .640$; ^c $\Delta R^2 = .00$, $p = .547$.

did not add significant variance to this model, $\Delta R^2 = .002$, $p = .640$. Third, adding parent's own reading interest did not improve the model either, $\Delta R^2 = .004$, $p = .547$. In summary, our model seems to indicate that parents who offered more frequent home literacy activities had children who were more interested in reading.

DISCUSSION

Children's home literacy environment is a well-studied topic, especially in the pre- and early school years (e.g., Burgess et al., 2002; Bus et al., 1995; Scarborough & Dobrich, 1994; Van Steensel, 2006). However, not many studies so far have examined the home literacy environment in the upper grades of primary school by considering both parent and child reports (see Klauda, 2009). Our study shows that parents of upper primary school children still engage in home literacy activities with their children, but the frequency declines from Grades 3–6. In addition, parents seem to let their third-to-sixth-graders' reading interest prevail over their own and adjust the frequency of their home literacy activities to their perception of their child's reading interest. That is, parents who perceived that their child was interested in reading, but who were not interested in reading themselves, still engaged in as many literacy activities at home as parents who were interested readers themselves. Finally, children whose parents engaged in many home literacy activities self-reported higher reading interest.

Our study shows that home literacy activities still take place when children are in the higher grades of primary school, yet parents do not engage in these activities on a daily basis. Shared book reading is commonly recognized as an important way to enhance young children's literacy development (e.g., Bus et al., 1995; Mol & Bus, 2011; Mol et al., 2008), and most parents in our sample indeed seemed to have engaged in this activity when their children were young. On average, 92.9% of the parents reported reading to their kindergarten child a couple of times per week or even every day. At present, however, the majority of parents of these third to sixth graders (80.5%) reported hardly ever engaging in shared reading (i.e., never, or once or twice per month). Other home literacy activities that hardly ever took place in our sample were helping the child select a new book (94.9% scored "never" or "once or twice a

month") and taking the child to a bookstore or library (92.7% scored "never" or "once or twice a month"). It might be that some parents do not know how to help their child with selecting a new book because they are lacking knowledge about recent children's literature. In addition, when parents do not engage in shared reading with their third to sixth graders, they might not know enough about their child's book preferences to help them find their next book. Interestingly, most parents in our sample reported to be very much aware of their children's favorite reading materials (91.4% scored "agree" and "agree a lot").

Furthermore, we showed that there is a decline in the parent-reported frequency of home literacy activities as children get older: children in Grade 3 in our sample were more often being read to by their parent, read more often out loud at home, and engaged in book talk more frequently with their parents than children in higher grades. Interestingly, this decline in home literacy activities mirrors a decline in reading interest and enjoyment during primary school that has been shown by previous studies (McKenna, Kear, & Ellsworth, 1995; Petscher, 2010). Hence, it could be that stimulating parents to engage in more home literacy activities might prevent children's reading interest to drop during primary school. This assumption is confirmed by our analyses in the subsample of third and fourth graders, which showed that parent-reported home literacy activities predicted children's self-reported reading interest, whereas the amount of books at home and parents' own reading interest did not seem to explain additional variance. That is, children in Grades 3 and 4 from homes with more frequent home literacy activities were more interested in reading themselves. This is in line with a study among fourth to ninth graders that differentiated between "readers" and "not-readers." Both groups were read to when they were young, and were sometimes still encouraged to read, but the parents of the avid readers continued to be involved in their children's reading by, for example, recommending books to them and engaging in book discussions (Strommen & Mates, 2004). In addition, an extensive review showed that parent involvement in children's reading was more important than support from teachers or peers in enhancing adolescents' reading interest (Klauda, 2009).

This may imply that the reciprocal causation model (Mol & Bus, 2011; Stanovich, 1986) still is relevant for primary school children's home experiences. Our results seem to indicate that children can be supported by their home literacy environment to enter or stay in the positive reading spiral, as predicted by the model, also when they are capable of reading independently. Encouraging parents to engage in many home literacy activities with their children in the upper grades of primary school might therefore have positive effects on the reading interest and reading skills of this age group. For example, a recent study of a summer literacy program targeting fourth graders showed that children's reading comprehension increased when parents monitored their children's comprehension of books that were matched on children's interests and reading level (Kim et al., 2017). Future studies might examine the relations between children's reading interest and skills and the ways through which these can be impacted through their parents' involvement in more detail and longitudinally. These studies should also include observational methods to find out which home literacy activities are not only common in households with older children, but also affect children's willingness to read. Findings may also be used to improve the quality of the home literacy activities self-report scale for children in the upper grades of

primary school. The reliability of our current scale was acceptable, but not very high ($\alpha = .66$). This might be related to the finding that some of the items did not show much variability because the majority of parents did or did not engage in those activities. Getting a better understanding of the set of activities that seem specifically effective for this age group might improve the quality of the home literacy activity questionnaire that was used in the current study. Furthermore, our subsample consisted of third and fourth graders only, so it would be interesting to see whether the same relations between the home literacy environment and reading interest might be found for fifth and sixth graders or beyond.

Our study with the third and fourth graders further showed a moderate relation between parental reports of children's reading interest and children's self-reported reading interest. This implies that parents were capable of perceiving whether their child was an interested reader or not. Previous studies with younger children have questioned the positive relations between parental reports of children's reading interest and the frequency of home literacy activities, claiming that these results might be due to inaccurate or biased parental reports (e.g., Frijters et al., 2000). Our study shows that, at least for our age group, parent reports of children's reading interest are in line with children's self-reported reading enjoyment. Future studies might, however, include both parents' and children's reports, as well as home observations to control for the social desirability bias that might be one of the pitfalls of using self-report measures.

Interestingly, parents adjusted the frequency of their home literacy activities to their child's perceived reading interest. They were able to set aside their own negative feelings toward reading if they perceived that their child was interested in reading. This seems to contradict the "Reading attitude acquisition model," which claims that children's reading interest is influenced by their perceptions of the beliefs of significant others, such as parents, about reading (McKenna et al., 1995). One of the assumptions of this model is that if parents are not very interested in reading it is likely that their children will not consider reading an important activity either. Our results suggest however that parents who are not interested in reading themselves can still deliberately engage in frequent home literacy activities, perhaps because they are aware of the benefits of reading for their children. It might also be that parents of older children are more susceptible for the opinions and feelings of their children because older children are better able to express their needs and act more independently. An increased reading interest of their child may further encourage parents to engage in literacy activities even more, leading to a positive spiral pathway (Dobbs-Oates et al., 2015; Gonzalez-DeHass et al., 2005; Grolnick & Slowiaczek, 1994). Put differently, our study showed that children's perceived reading interest seemed to be of primary importance for parents in deciding whether or not to engage in home literacy activities.

Neither the amount of books at home, nor parents' own reading interest seemed to contribute independently to children's self-reported reading interest, over and above the frequency of home literacy activities. In addition, parents' level of education did not play a role either. This indicates that engaging in home literacy activities is more important for enhancing children's reading interest than the mere presence of books at home, and parents' own reading interest and education, at least in third and fourth graders. This is contrary to research that focused on children's reading comprehension, which does seem to be related to the amount of books at home (Sénéchal, 2006).

An international comparative study showed a stronger effect of amount of books at home on fourth graders' reading performance, compared to early home literacy activities and parental attitudes toward reading (Park, 2008). However, it should be taken into account that our subsample was relatively small. Our findings should be replicated in a larger sample of parents and children to find out whether engaging in frequent literacy activities at home is the most decisive aspect of the home literacy environment for children in primary school.

IMPLICATIONS FOR PRACTICE, APPLICATION, THEORY, AND POLICY

Our study implies that encouraging children to develop an interest in reading requires activities from parents, such as reading to their children and talking about the stories they read. Interestingly, parents who perceive that their children are interested in reading are more likely to offer such activities at home. Overall, our study seems to support that engaging in many home literacy activities might be a good approach to reinforce the positive reading spiral in primary school and diminish the decline in reading interest that often takes place over the course of primary school.

National reading campaigns should make parents aware of the importance and benefits of engaging in home literacy activities, such as sharing their own books and discussing books or articles (Kim et al., 2017; Klauda, 2009), even when children are able to read independently. These activities should take place in a positive affective atmosphere as it has been shown that children whose parents consider reading a pleasurable activity have a more positive reading attitude than children whose parents focus on skills instruction (Baker, Scher, & Mackler, 1997; Britto & Brooks-Gunn, 2001; Sonnenschein & Munsterman, 2002). In addition, schools could also make parents aware of the importance of home literacy activities for children in the higher grades of primary school. Future studies might examine which home literacy activities are especially effective for encouraging older children's reading interest. For example, schools could try to make a connection between reading at school and at home. This way, parents can show that they are interested in what children are reading and learning. Rereading at home of books that were used in school or recommended by school appears to contribute to children's reading motivation, next to increasing parental involvement (Gonzalez-DeHass et al., 2005; Kim et al., 2017; Koskinen et al., 2000). Engaging in home literacy activities, preferably supported by school, can help primary school children to remain interested in reading and to continue reading.

ADDRESSES AND AFFILIATIONS

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ARTICLE INFORMATION

Conflict of Interest Disclosures: Each author signed a form for disclosure of potential conflicts of interest. No authors reported any financial or other conflicts of interest in relation to the work described.

Ethical Principles: The authors affirm having followed professional ethical guidelines in preparing this work. These guidelines include obtaining informed consent from human participants, maintaining ethical treatment and respect for the rights of human or animal participants, and ensuring the privacy of participants and their data, such as ensuring that individual participants cannot be identified in reported results or from publicly available original or archival data.

Funding: This work was not supported by any grants.

Role of the Funders/Sponsors: None of the funders or sponsors of this research had any role in the design and conduct of the study; collection, management, analysis, and interpretation of data; preparation, review, or approval of the manuscript; or decision to submit the manuscript for publication.

Acknowledgments: n/a.

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