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Personalized Expert Guidance of Students' Book Choices in Primary and Secondary Education

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ABSTRACT

In many schools, independent silent reading of self-selected books is used to promote reading. However, self-selection may be insufficient to counter negative reading experiences, particularly when students choose books not attuned to their reading level and interest. Two studies experimentally tested whether personalized expert guidance when selecting books could prevent a reading attitude decline. Study 1 focused on readers in prevocational secondary education (Grades 7 and 8; N = 136). Study 2 included younger readers from primary education (Grades 4–6, N = 99). Students in the experimental condition met with a librarian to discuss book choices every two weeks for three months. In both studies, the intervention stabilized the reading attitude decline, although, in Study 1, only for more advanced readers. In Study 2, reading comprehension of the most proficient readers also improved. This indicates that guidance in selecting books can preserve students' reading attitude and increase reading proficiency growth.

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In the upper half of primary school, students' interest in reading books and other long stretches of text begins to decline—a decline that continues into secondary education (e.g., Gottfried, Fleming, & Gottfried, 2001; Gunobgunob-Mirasol, 2020; Kelley & Decker, 2009; McKenna, Conradi, Lawrence, Jang, & Meyer, 2012; McKenna, Kear, & Ellsworth, 1995). Reading attitude declines and growth in achievement levels off, especially for students from age 10 to 15 (e.g., Mullis, Martin, Foy, & Drucker, 2012). These effects, referred to by Chall as the "fourth-grade slump" (Chall & Jacobs, 2003), can result from frustrating reading experiences that often occur in this stage of reading development. Unlike the first three years of education, in which students read simple texts about familiar topics, by Grade 4, students read more varied, complex, and linguistically and cognitively challenging texts. Texts may contain words that are hard to decode and new words and ideas beyond students' current repertoire and knowledge of the world. Reading texts that are not fine-tuned to students' abilities and interests without sufficient guidance from teachers while reading the texts may trigger negative reading experiences that can explain the decline in reading attitude and skills (Locher, Becker, & Pfost, 2019; Snow & Moje, 2010).

To promote sufficient practice in reading, understanding, and learning from increasingly demanding texts, many Dutch schools have enriched their school libraries (Nielen & Bus, 2015) and schedule Independent Silent Reading (ISR) time in which students independently read self-selected books (Garan & DeVoogd, 2008; Krashen, 2006; Manning, Lewis, & Lewis, 2010). Although the impact of such ways of increasing reading time seems evident, research so far has failed to prove the efficacy of scheduling time for reading (e.g., National Reading Panel, 2000, Yoon, 2002). To explain this lack of effects, we hypothesize that, contrary to what is commonly assumed, ISR in schools can easily become a source of negative experiences, particularly when students are expected to self-select books. Self-selection is an important element of ISR because it is assumed to trigger a sense of autonomy that enhances reading motivation (Krashen & McQuillan, 2007; Ryan & Deci, 2000). However, research has shown that many students struggle to select books that match their skills and interests, thus, causing negative reading experiences (c.f., Kragler, 2000; Merga, 2018; Merga & Roni, 2017).

Especially particular subsamples, such as students growing up in less literate families, are in danger of selecting books that do not fit their skills and interests, making them particularly prone to negative experiences during ISR (Strommen & Mates, 2004). These students are less inclined to talk about books with their parents or to visit libraries and bookstores (Baker, 2003; Kraaykamp, 2003). Therefore, they may be less familiar with book titles, which can result in difficulties in finding

appropriate books, despite the presence of varied reading materials in school (Hibbard & Franklin, 2015; Mackey, 2014). When choosing books for ISR, these students may rely on superficial selection strategies, based, for example, on physical features such as cover or length, and, consequently, do not succeed in finding books that are attuned to their skills and interests (Hopper, 2005; Merga, 2016; Merga & Roni, 2017; Mohr, 2006). Reading texts during ISR can then become a frustrating endeavor, resulting in discouraging reading experiences, leading to a decreased reading attitude (Locher et al., 2019).

Assuming that an accumulation of negative experiences with reading could partly explain the decline in reading attitude from Grade 4 onward, we may be able to reduce the decrease in attitude by taking away one of the main barriers for positive reading practice: finding books that match students' skills and interests (Fulmer & Frijters, 2011; Locher et al., 2019; Margolis & McCabe, 2004). We hypothesize that helping students find appropriate books can turn ISR into a mainly positive experience and reduce the reading attitude decline. We additionally expect that such a favorable change could encourage a virtuous cycle (Mol & Bus, 2011): as a result of positive reading experiences, students' reading attitude improves, which, in turn, may expand reading activities, leading to a growth in familiarity with book titles and better reading proficiency. We may, thus, also prevent additional emotional barriers for new text reading attempts (Bishop, 2009; Nielen, Mol, Sikkema-de Jong, & Bus, 2016).

Several studies experimented with ways to provide additional support in choosing books during ISR (Kelley & Clausen-Grace, 2006; Reutzel, Jones, Fawson, & Smith, 2008; Weber, 2018; Wutz & Wedwick, 2005). This support took various forms. For instance, in *Scaffolded Silent Reading* teachers guide students' book selection by arranging the library to find books on their reading level more easily and teach students selection strategies (Reutzel et al., 2008). In R^5 (read, relax, reflect, respond, rap), teachers log students' book choices and, depending on their progress in reading, support those students who seem to have trouble finding appropriate books (Kelley & Clausen-Grace, 2006). In BOOKMATCH (Wutz & Wedwick, 2005), students fill out a book selection form to decide whether the book they just selected is appropriate. All studies indicated that guidance is effective in promoting students' reading attitude and proficiency. Still, in all cases, students themselves were left responsible for finding appropriate books. Even though this may have improved their book selection, it may not have resulted in the most optimal prevention of negative reading experiences.

In this study, we built on such interventions. To be sure that the support is fine-tuned to students' reading skills and interests, we involved experts in children's literature—librarians—to help students select books. We expected this support would increase the chance that students have

optimal reading experiences that would benefit their reading attitude, familiarity with book titles, and reading achievement.

The Current Study

Assuming that reading books not fitting students' skills and interests causes negative reading experiences (Fulmer & Frijters, 2011; Locher et al., 2019; Margolis & McCabe, 2004), we examine whether personalized guidance in book selection reduces the reading attitude decline and furthers students' reading development. Students met with a librarian in biweekly meetings to discuss their experiences with the book they were currently reading or had just finished and to receive suggestions for a new book attuned to students' reading level and interests. We aimed to answer the following research questions:

1. Does personalized expert guidance in selecting books for ISR influence students' reading attitude, and, consequently, their familiarity with book titles and reading comprehension?
2. Do the effects of book selection guidance vary with students' initial levels of reading attitude, familiarity with book titles, and reading comprehension?

We expected that more reluctant readers would benefit more than typical readers from expert guidance because particularly those readers have problems selecting books matching their reading level and interests (Hairrell, Edmonds, Vaughn, & Simmons, 2010; Kragler, 2000; Merga, 2019).

Study 1: Supporting Book Choices in Prevocational Secondary Education

Study 1 focused on students in Grades 7 and 8 of prevocational education, the lowest Dutch secondary education level. Because students in prevocational education mostly have a low reading proficiency (Feskens, Kuhlmeier, & Limpens, 2016) and limited interest in reading (DUO Onderwijsonderzoek, 2017), they may benefit from guidance in selecting appropriate books for ISR (Hairrell et al., 2010; Merga, 2019).

Materials and Methods

Design

Stratified for school, we randomly assigned each participant to the experimental or control condition. Students in the experimental condition met with a librarian every two weeks to discuss the selection of a new book

while the control group self-selected books for reading during ISR. Pre- and post-tests included group-wise administration of questionnaires evaluating reading attitude and familiarity with book titles and a reading comprehension test.

Participants

The sample included 82 Grade 7 students and 54 Grade 8 students, and more girls ($n = 78$) than boys ($n = 58$). The participants' average age was 13.42 years ($SD = 0.82$; range: 11.83–15.18). In all six schools (14 classes), the libraries were well-equipped and schools offered ISR on average for 35 min per week. The number of students willing to participate in the intervention ranged per school from 9 to 33. Because the librarians of the public library, employed at the school for a few hours per week, normally were mainly responsible for managing and updating the school library collection, each librarian had only limited time available and could guide a maximum of 10 students. Consequently, the control group ($n = 83$) was larger than the experimental group ($n = 53$).

Intervention

Individual meetings between students and librarians took place on school days, each meeting lasting approximately 10 min. To structure the conversations, the researchers provided a checklist with questions about the book that the student was currently reading, such as "Do you like the book?" and "Do you find the book easy or difficult?" (see Appendix for the complete checklist). Guided by students' responses, librarians suggested one or more new books attuned to students' reading level and interests. Librarians were careful to maintain students' sense of autonomy by presenting their advice as a suggestion and not as a prescription, as this may be counterproductive and reduce motivation (Merga & Roni, 2017; Ryan & Deci, 2000).

Measures

Reading attitude

The Reading Attitude Scale (Aarnoutse, 1990) contained 27 questions with a yes or no answer, among which: "Do you often read in leisure time?" and "Do you find reading boring?" After recoding negatively formulated items, we calculated a sum score (Cronbach's α pre-test = .93, post-test = .94). In previous studies, scores on the Reading Attitude Scale were found to be significantly correlated with scores on a title recognition list and reading comprehension (Nielen & Bus, 2015). Research also shows that reluctant

readers, unfamiliar with age-appropriate book titles, had significantly lower scores on this questionnaire than enthusiastic readers (Nielen et al., 2016).

Title recognition

A title recognition list containing 34 titles of existing children's books, mixed with 16 fake titles, was used to assess familiarity with books (Stanovich & West, 1989). To account for varying reading levels, the list included books appropriate for students in primary education (9–12 years) and books for adolescents. Students checked the titles they knew and students' scores were the percentage of (correctly) checked existing titles minus the percentage of (incorrectly) checked fake titles.

To prevent a testing effect, we developed two versions (A and B). Half of the students received version A at pre-test and version B at post-test and half vice versa. Both versions had acceptable reliabilities (Cronbach's α version A: pre-test = .83, post-test = .76, version B: pre-test = .88, post-test = .85). Version B appeared to include significantly fewer well-known books than version A, $t(133) = -2.20$, $p = .030$. Therefore, pre-test and post-test scores on version B were increased with the difference between the average scores on version A and B at pre-test (4.36), so that the mean of both versions at pre-test was the same.

Reading comprehension

To assess reading comprehension, we used the "SALT-Reading" consisting of factual and inferential comprehension questions about brief texts varying in genre (narrative, expository, argumentative, instructive) (Van Steensel, Oostdam, & Van Gelderen, 2013). To prevent a testing effect, we divided the test into two parts, each containing 37 questions. Each version contained multiple-choice questions and open-ended questions (respectively, seven and four in version A and B). Answers to the open-ended questions were double-coded by two independent coders. Two items had low inter-rater reliability and were not used for calculating total scores. Total scores were the percentage of questions answered correctly (Cronbach's α version A: pre-test = .80, post-test = .82, version B: pre-test = .83, post-test = .81). Because the scores on both versions significantly differed, $t(102) = -4.71$, $p < .001$, we added 15.40 (the difference between the two averages at pre-test) to pre-test and post-test scores on version A so that both versions had the same mean at pre-test.

Procedure

The university's Ethical Review Board approved the study. In the school year 2017–2018, six schools and their part-time librarians agreed to

participate. Students were encouraged to participate by the possibility of winning a cinema ticket raffled among the participants in each school. The students' parents received information about the study and a form that enabled them to refuse their child's participation. Both the questionnaire and the reading comprehension test were administered to entire classes in 50-min class sessions. The sessions were introduced by the second author or a trained research assistant, and teachers were present to maintain order. At the start, librarians received instruction by phone about the checklist. Halfway through the intervention, we contacted them again to monitor implementation and hear their experiences. Based on the completed checklists, we collected information about the number of meetings and the number of selected books.

Analyses

As the data were hierarchically structured (students in classes in schools), we used Huber-White corrections of standard errors to account for this dependency. Using the Complex Sample General Linear Model (CSGLM) in SPSS, reading attitude, title recognition, and reading comprehension were regressed on pre-test scores, gender, reading comprehension at pre-test, condition (experimental vs. control), and interactions between the covariates and condition. We entered reading comprehension at pre-test and the interaction of reading comprehension at pre-test × condition in all analyses because the intervention's effectiveness might depend on students' reading level.

Missing items on reading comprehension were considered incorrect. Following the SALT-Reading procedures (Van Steensel et al., 2013), we coded the test as missing if more than three consecutive items were lacking. Missing items on reading attitude and title recognition were imputed using the EM-procedure in SPSS. Students with missing scores on an entire test or questionnaire were excluded from the analysis. For analyses of reading attitude, title recognition, and reading comprehension, the groups included 95, 95, and 88 students.

The analyses concerned the intent-to-treat group. As four experimental students did not have any meetings with their librarian, we also conducted the analyses without these students.

Results

Implementation

The students had zero ($n = 4$), three ($n = 7$), four ($n = 8$), five ($n = 15$), or six meetings ($n = 19$) with the librarian. According to the librarians,

especially struggling readers had difficulties talking about books they enjoyed, which made it hard to suggest books. One librarian believed that these students need more meetings to make the intervention work. Librarians mostly selected a few books they considered appropriate, from which students made their choice. The number of books read during the intervention period ranged from zero to seven ($M = 3.35$; $SD = 1.56$). Sometimes no new books were advised, because students had not yet finished their current book. Fourteen students (28.6%) selected a maximum of two new books. The number of books was related to students' scores on the reading comprehension test: the 50% highest-scoring students selected on average 4.06 new books, while the 50% lowest-scoring students selected 3.05 new books, $t(28) = -1.92$, $p = .033$ (one-sided).

Reading Attitude

At pre-test, experimental and control students did not significantly differ in reading attitude, $t(133) = 0.65$, $p = .515$. Post-test scores for reading attitude were lower than pre-test scores (see Table 1), indicating that reading attitude declined. Reading attitude at pre-test was a significant predictor of reading attitude at post-test (Table 2). Although there was no significant main effect of the intervention, there was a significant interaction effect of intervention × reading level at pre-test. Students who scored relatively high on reading comprehension (pre-test) benefited from the intervention and outperformed the control group, while students with relatively low scores on reading comprehension lagged behind the control group (Figure 1). The intervention effect for students with high reading comprehension scores at pre-test equaled Cohen's $d = 0.25$.

Title Recognition

At pre-test, experimental and control students did not significantly differ on the title recognition list, $t(133) = 0.54$, $p = .588$. Students' pre-test scores significantly predicted their post-test scores (Table 2). Neither the main effect of the intervention nor the interactions of the covariates and the intervention were significant.

Reading Comprehension

At pre-test, experimental and control students did not significantly differ in reading comprehension, $t(102) = 0.55$, $p = .586$. In addition to an effect of pre-test scores on reading comprehension, there was an effect

Table 1. Means, Standard Deviations, and Correlations in Study 1 (N_{total} = 104–135; $N_{experimental\ group}$ = 40–53; $N_{control\ group}$ = 64–82).

	Total sample	Experimental group	Control group	1	2	3	4	5	6
	M (*SD*)	*M* (*SD*)	*M* (*SD*)						
Pre-test									
1. Reading attitude	11.51 (7.65)	10.97 (7.85)	11.85 (7.55)	–					
2. Title recognition	11.87 (11.48)	11.27 (13.63)	12.26 (9.91)	−.02	–				
3. Reading comprehension	64.20 (16.60)	63.07 (17.49)	64.91 (16.11)	.28**	.35***	–			
Post-test									
4. Reading attitude	11.25 (8.02)	11.16 (8.57)	11.30 (7.74)	.78***	−.06	.31**	–		
5. Title recognition	13.33 (11.46)	12.05 (14.02)	14.07 (9.71)	.08	.48***	.37***	.06	–	
6. Reading comprehension	66.58 (17.01)	62.33 (16.83)	69.13 (16.17)	.37***	.25**	.69***	.41***	.36***	–

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

Table 2. Results of the Regression Analyses in Study 1.

Parameter	Reading attitude	Title recognition	Reading comprehension
Intercept	10.90 (0.94)	12.11 (2.44)	64.74 (2.82)
Pre-test score	0.82 (0.09)***	0.30 (0.12)*	0.79 (0.12)***
Reading comprehension	−0.04 (0.05)	0.17 (0.08)	
Gender (0 = boy)	−0.71 (1.24)	4.58 (2.95)	6.02 (2.72)*
Condition (0 = control group)	−1.99 (1.85)	−1.51 (3.87)	−2.18 (3.23)
Pre-test × condition	−0.18 (0.13)	0.07 (0.25)	−0.07 (0.15)
Reading comprehension × condition	0.18 (0.06)**	0.07 (0.13)	
Gender × condition	4.65 (2.33)	−1.88 (4.91)	−6.99 (3.75)

Note. Standard errors are presented in parentheses.
*$p < .05$.
**$p < .01$.
***$p < .001$.

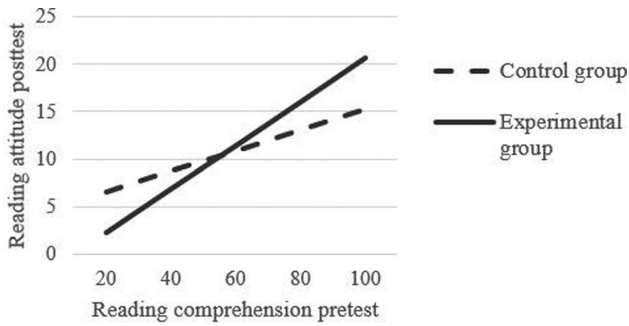

Figure 1. Interaction effect of reading comprehension pretest scores and experimental condition on reading attitude.

of gender (Table 2): girls outperformed boys. Condition had no significant effect on reading comprehension. Additionally, the interactions of the covariates and condition were not significant.

Additional Analyses

Four students in the experimental condition did not have any meetings with the librarians. Excluding these students from the analyses did not change the outcomes.

Discussion

In prevocational secondary education, personalized expert guidance diminished the decrease in reading attitude that was apparent in the sample as a whole, although not all students benefited. Personalized guidance of book selection positively affected reading attitude compared to self-selection of books. However, contrary to our expectation that particularly struggling readers would benefit from guidance in selecting books, the effect on reading attitude was limited to students who were relatively advanced in

reading. Possibly, the poor reading skills of struggling readers precluded an initial interest in reading (Soemer & Schiefele, 2018; Spichtig, Pascoe, Ferrara, & Vorstius, 2017), and thus, hampered the implementation of the intervention. This hypothesis is supported by the observation that the least proficient readers only read few books during the intervention, while more proficient readers were able to read more books in the intervention period. Consequently, the proficient readers likely had more meaningful discussions with the librarians, thus, receiving more guidance in selecting new books. This study did not reveal any effects of the intervention on the more distal measures of familiarity with book titles and reading comprehension.

Study 2: Supporting Book Choices in Primary Education

Study 2 allows testing the intervention's impact when students read more books because more time is available for ISR. In all participating primary schools, ISR took place daily. We focused on students in Grades 4–6 because, for many students, this period marks the onset of the decline in reading attitude and proficiency (Chall & Jacobs, 2003; Gottfried et al., 2001; McKenna et al., 1995).

Materials and Methods

Design

In each school, an equal number of students was randomly assigned to the experimental or the control group, stratified for grade and gender. Before and after the three-month intervention period, students filled out questionnaires to assess their reading attitude and title recognition; they also completed a reading comprehension test.

Participants

One hundred twelve students from 27 classes in nine schools participated. In similar schools, on average 99 min per week were reserved for ISR (Van der Sande, Wildeman, Bus, & Van Steensel, 2019). Due to the limited time availability of librarians, we had to constrain the number of participants per school, ranging from 10 to 15. One school dropped out because the librarian did not have any meetings with the students. Hence, the final sample consisted of 99 students from eight schools (experimental group: $n = 49$; control group: $n = 50$), of whom 40 were in Grade 4, 36 in Grade 5, and 23 in Grade 6. On average, students were 10.41 years old ($SD = 0.87$; range: 8.79–12.37) and the sample included about as many boys ($n = 50$) as girls ($n = 49$).

Intervention

The intervention was the same as in Study 1: Students in the experimental condition met once every two weeks with a librarian to discuss new books while students in the control group self-selected books.

Measures

Reading attitude

Students rated 24 pictures and 16 Dutch words on a 6-point Likert-scale, ranging from 1 (*not attractive at all*) to 6 (*very attractive*) (Nielen et al., 2018). Half of the pictures and words were related to reading, while the other half were neutral. The reading and neutral pictures were matched on the color and size of the objects and in depicting people or animals (Figure 2). The reading and neutral words had a similar length (e.g., "book" and "door"). The average score of the neutral items (Cronbach's α pre-test = .81, post-test = .86) was subtracted from the average score of the reading items (Cronbach's α pre-test = .94, post-test = .96). A validation study, including over 1200 students, showed that readers from Grades 4 to 8 rarely reading books scored significantly lower on this measure than students regularly reading books (Nielen et al., 2016).

Title recognition

We used a title recognition list as an indicator of familiarity with books (see Study 1). To prevent a testing effect, we developed two versions. Half of the students made version A at pre-test and version B at post-test and the other half vice versa. Both contained 34 existing titles, appropriate for the students' age range, and 16 fake

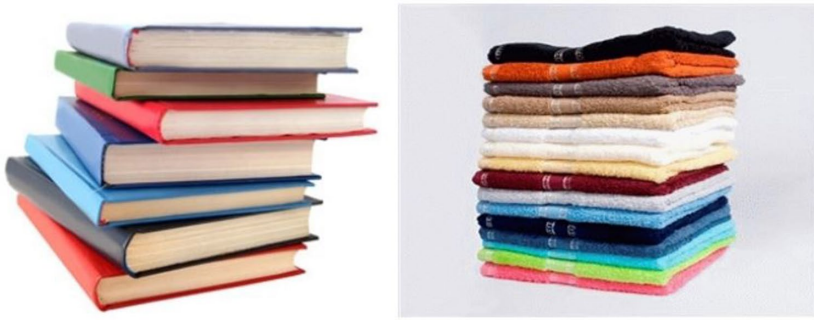

Figure 2. Example of a reading picture and matched neutral picture in the Picture Evaluation Task.

titles (Cronbach's α version A: pre-test = .87, post-test = .84, version B: pre-test = .84, post-test = .81). The difference between the two versions at pre-test indicated that version A included fewer well-known books than version B, $t(92) = 2.12$, $p = .037$. We added the average difference between version A and B at pre-test (6.91) to the pre-test and post-test scores on version A, so that both versions had the same mean at pre-test.

Reading comprehension

We used a standardized reading comprehension test (De Vos, 2011), containing multiple-choice questions about short, age-appropriate texts. The questions concern inferencing (e.g., deriving word meanings), integration of information (e.g., stating the main idea of a text), and comprehension of text structure (e.g., placing events in chronological order). To prevent a testing effect, we divided the test into two parts (version A and B). Both versions were comparable in the amount of text and the number of questions asked, ranging from 17 to 21. Total scores were based on the percentage of questions answered correctly (Cronbach's α pre-test = .69 and post-test = .68). The average scores on version A and B differed for none of the grades, indicating equal difficulty.

Procedure

The study, conducted in the school year 2017–2018, was approved by the university's Ethical Review Board. Nine schools and their librarians agreed to participate. Parents were asked for their informed consent. The reading attitude questionnaire, title recognition list, and reading comprehension test were administered groupwise. After a brief instruction by the first author or a trained research assistant, students completed the questionnaires and test while teachers were present to maintain order. It took students about 60 min to complete all instruments. Halfway through the intervention, we contacted the librarians to monitor implementation.

Analyses

We used the same procedure as in Study 1 to answer the research questions. Using CSGLM with Huber-White corrections for school, reading attitude, title recognition, and reading comprehension were regressed on pre-test scores, gender, reading comprehension at pre-test, condition (experimental vs. control), and interactions between the covariates and condition.

For missing items on reading attitude and title recognition, we used the EM-procedure in SPSS. Students with missing scores on the comprehension test or a questionnaire were excluded from the specific

analysis. Analyses targeting reading attitude, title recognition, and reading comprehension included 92, 92, and 94 students.

Results

Implementation

The students had four ($n = 4$), five ($n = 28$) or six meetings ($n = 17$) with the librarians. The librarians' reports were mainly positive: most students liked to talk about their books. The librarians noticed large differences in reading level and interest, which, they suggested, highlights the importance of personalized guidance. Some students were inclined to read the same books as their classmates, even though these books were too hard for them. The meetings with the librarians helped these students realize which books were more appropriate and to select better matching books. One librarian, however, mentioned that two of her students, reluctant readers, did not like to talk about books and were less open to advice. The number of selected books during the intervention period ($M = 4.35$; $SD = 1.84$) was not dependent on students' reading proficiency. The number of students who selected a maximum of two new books ($n = 5$; 10.2%) was lower than in prevocational secondary education (28.6%).

Reading Attitude

At pre-test, students in the experimental and control group did not significantly differ in reading attitude, $t(92) = -0.57$, $p = .570$. Reading attitude at post-test was lower than at pre-test (see Table 3), indicating that, on average, students' reading attitude decreased. Regression analysis revealed significant main effects of pre-test scores and gender on reading attitude at post-test. Girls had a more positive reading attitude than boys. The condition's effect was significant and positive (Cohen's $d = 0.44$): experimental students had a more positive reading attitude than control students (Table 4). The positive interaction between pre-test and condition indicated that students who had a more positive reading attitude at pre-test benefited more from the intervention than students with a less positive attitude (Figure 3).

Title Recognition

At pre-test, students in the experimental and control group did not significantly differ in title recognition, $t(92) = -0.03$, $p = .977$. Apart from a positive effect of pre-test scores on title recognition at post-test, none of the main effects or interactions between condition and covariates were significant (Table 4).

Table 3 Means, Standard Deviations, and Correlations in Study 2 (N_{total} = 48–49; $N_{experimental\ group}$ = 45–49; $N_{control\ group}$ = 94–97).

	Total sample	Experimental group	Control group	1	2	3	4	5	6
	M (*SD*)	*M* (*SD*)	*M* (*SD*)						
Pre-test									
1. Reading attitude	0.50 (0.97)	0.55 (0.99)	0.44 (0.96)	–					
2. Title recognition	21.46 (15.72)	21.50 (15.76)	21.42 (15.85)	.15	–				
3. Reading comprehension	66.35 (18.81)	66.71 (19.69)	65.97 (18.05)	.29**	.35***	–			
Post-test									
4. Reading attitude	0.38 (1.04)	0.51 (1.16)	0.25 (0.89)	.77***	.04	.31**	–		
5. Title recognition	25.02 (14.26)	24.91 (14.60)	25.12 (14.05)	.31**	.45***	.28**	.13	–	
6. Reading comprehension	68.05 (18.58)	66.23 (21.02)	69.87 (15.78)	.23*	.30**	.42***	.25*	.22*	–

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

Table 4. Results of the Regression Analyses in Study 2.

Parameter	Reading attitude	Title recognition	Reading comprehension
Intercept	0.42 (0.14)	26.61 (2.61)	66.36 (2.13)
Pre-test score	0.48 (0.07)***	0.35 (0.14)*	0.09 (0.11)
Reading comprehension	0.01 (0.01)	0.09 (0.08)	
Gender (0 = boy)	0.44 (0.13)*	−2.73 (4.25)	9.79 (1.87)***
Condition (0 = control group)	0.46 (0.19)*	−3.55 (2.16)	0.75 (2.34)
Pre-test × condition	0.47 (0.15)*	0.11 (0.23)	0.58 (0.17)*
Reading comprehension × condition	0.00 (0.01)	−0.05 (0.13)	
Gender × condition	−0.54 (0.32)	6.83 (4.95)	−11.94 (3.08)**

Note. Standard errors are presented in parentheses.
*$p < .05$.
**$p < .01$.
***$p < .001$.

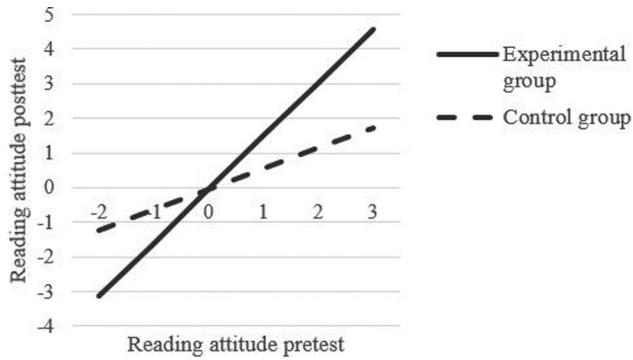

Figure 3. Interaction effect of reading attitude pretest scores and experimental condition on reading attitude.

Reading Comprehension

At pre-test, students in the experimental and control group did not significantly differ in reading comprehension, $t(94) = -0.19$, $p = .849$. The regression revealed a main effect of gender (Table 4): girls outperformed boys. The intervention did not have a main effect on reading comprehension, but there were significant interaction effects. The interaction of reading comprehension pre-test scores and condition was positive. Only students who scored high on reading comprehension at pre-test benefited from the intervention, while students who scored low did not. The negative interaction effect of gender and condition indicates a negative effect on girls' reading comprehension, but not for boys.

Discussion

Students' reading attitude declined from pre-test to post-test, but there was less decline with personalized guidance. Students who had a more positive reading attitude at the start benefited most from the intervention. Likewise, personalized guidance improved reading comprehension, but

only for more proficient readers. The findings suggest that personalized guidance in selecting books, more than complete autonomy, can reduce the decline in reading attitude and, as a result, promote reading development. There is no obvious explanation for the finding that the intervention harmed reading comprehension for girls. There was no support for the assumption that students read more often due to the intervention, thereby increasing their familiarity with books.

General Discussion

Our study indicates that prevention of negative reading experiences by supporting book selection can reduce the declining interest in reading that is often visible in students from Grade 4 onward. In both Study 1 and Study 2, guiding students in finding appropriate books for ISR affected reading attitude: without guidance, reading attitude decreased, but attitude stabilized when students received support in book selection. Thus, for students in the upper half of primary school and beyond, ISR without measures that guarantee positive reading experiences may be insufficient to promote reading (Kelley & Clausen-Grace, 2006; Reutzel et al., 2008).

The interaction effects between pre-test scores and condition revealed that more advanced students benefited most from guidance in selecting books. The most plausible reason for this is that these students received more substantial support, simply because they read more books: advanced readers were ready to start a new book more often than reluctant readers, making their meetings with the librarian more meaningful. Additionally, an initial positive attitude toward reading likely made these students more susceptible to the librarians' advice. Particularly for students with reading deficits—struggling readers in prevocational education—guidance appeared to have no effects. As ISR formed a minor part in the prevocational education curriculum, these students read only a few books during the intervention period. Consequently, the intervention likely had too little substance. The librarians' comments corroborate this conclusion: they suggested that a longer intervention period might be necessary for this group of students.

Of the effects we found, those on reading attitude were most pronounced, and they occurred in both age groups. Only the younger students improved in reading comprehension. Within this group, the more advanced students showed progress in reading proficiency, probably because this group was the only one with enough practice during the intervention to enable progress. Neither of the two studies revealed effects on familiarity with book titles, probably because this instrument was not sensitive enough to assess expanding reading activity in the short term.

Theoretical Implications

A phenomenon that is known as the fourth-grade slump, already signaled halfway through the twentieth century (Chall & Jacobs, 2003; Hildreth, 1947), continues to be valid: when students have passed the initial stages of reading acquisition and their reading development becomes increasingly dependent on their self-initiated reading activities, their reading attitude tends to decline and their reading proficiency levels off (Nielen, 2016; Snow & Moje, 2010). Investments in the availability of books in schools and the increased time reserved for ISR alone do not counter this negative trend.

Krashen's (2006) theory that students' reading development is promoted by increased practice appears to be corroborated: if we succeed in making students practice reading without experiencing frustration, this promotes students' reading attitude and, due to more practice, their reading proficiency. Krashen's assumption that this mechanism is elicited by simply providing access to books and encouraging autonomous reading was not supported: without an intervention that removes important barriers for practicing reading, such as inappropriate book choices, students' reading attitude declined. Our findings, in other words, suggest a conditional effect of ISR on reading development, which may explain the heterogeneous results that are found in studies on ISR effects (e.g., National Reading Panel, 2000; Yoon, 2002).

Our finding of a negative overall trend in reading attitude supports the hypothesis that students are prone to have negative reading experiences (Locher et al., 2019; Nielen et al., 2016). Our findings corroborate the theory that negative experiences are caused by widespread problems such as students' failure to select books that match their interests and reading level (Kragler, 2000; Merga, 2016, 2018; Merga & Roni, 2017). We assume that when this often happens and negative reading experiences build-up, their reading attitude decreases, which may likely level off students' reading development. If such frustrating experiences accumulate over several years, students may even develop an emotional resistance toward reading (Nielen et al., 2016).

The current findings also indicate that it is possible to give reading development a positive spin and ensure that students have more positive reading experiences which may stimulate an upward-moving reading cycle, leading to a more positive reading attitude, more practice, and higher reading proficiency (Mol & Bus, 2011; Snow & Moje, 2010; Stanovich, 1986). A small and rather inexpensive intervention involving incidental personal guidance in choosing books appeared to enhance students' reading development. We could show that personalized support in book selection has positive consequences for reading attitude and, to some extent, for reading achievement.

Limitations

It appears that our intervention was too short to be able to identify effects on title recognition. On average, students were not able to read more than three to four books in total. We might have found more effects on title recognition if we had, for instance, expanded the intervention period from three to six months (Krashen, 2001).

We did not study whether students' book choices aligned with the librarians' suggestions or students' satisfaction with these books. Assessment of their reading behavior (concentration, distraction) would have been a useful supplement to ascertain their positive reading experiences. Furthermore, the intervention effects may not be fully attributable to the quality of the librarians' advice but also to the fact that students have a chance to discuss books with a more knowledgeable other. For a critical test of this hypothesis we would need an additional experimental condition: discussing books without the intention to advise new books.

The RCTs were not designed to test the effects of the number of sessions, quality of the meetings, and students' satisfaction with the librarians' recommendations. We aimed to maximize the uniformity of the intervention for each student. Although alongside the number of sessions, we did not systematically collect information about the quality of the meetings with the librarians and the extent to which students accepted recommendations, the general impression is that we were quite successful, which makes it impossible to explore correlations between these variables and the outcome measures. As a source for new hypotheses, however, it might be interesting to explore correlations between these variables or even systematically test variability in implementation and outcome measures, for instance by assessing the effects of different dosages of the intervention.

Finally, there was a substantial difference in the time scheduled by schools for ISR: about half an hour per week in Study 1 and about 100 min per week in Study 2, which may additionally explain the minor effects in Study 1. To provide a stronger test for the hypothesis that personalized support is effective for older students in prevocational education, more effort should be made to increase reading time in future studies.

Conclusion

We conclude that simply providing time for independent reading at school does not stop the decrease in students' reading attitude in the upper half of primary school and beyond. Guiding students' book selection appears to counter students' waning interest in reading and promote their further reading development, although no effects were found for struggling

readers in prevocational secondary education. The guidance that contributes to an optimal match between student and book likely leads to an accumulation of positive book reading experiences. We found that a small-scale but well-chosen intervention substantially impacts students' reading: the intervention, including at most six 10-min meetings spread over three months, proved beneficial for reading attitude and reading achievement. We employed librarians to help students find appropriate books and personalize book choices. It might be possible to achieve the same with digital technology: by using reading analytics, it may be possible to monitor students' book choices and subsequent reading behavior. Connecting such diagnostics with databases of children's and youth literature might guide the selection of books adapted to students' interest and reading proficiency.

Disclosure Statement

No potential conflict of interest was reported by the authors.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Appendix: Checklist to Support Students' Book Choices

Date of the meeting:……
……

What is the last book you read or which book are you reading currently?
……
……

Did you finish the book?
- o Yes
- o No

Why/why not?
……
……

If a student is still reading a book: Do you intend to finish the book?
- o Yes, I want to finish the book.
- o I'm not sure whether I want to finish the book.
- o No, I don't want to finish the book.

Why/why not/why don't you know?
……
……

How much do you like the book?
- o Like very much
- o Like
- o Neither like nor dislike
- o Dislike
- o Dislike very much

Why do you find this?
……
……

Do you find the book easy or difficult?
- o Very difficult
- o Quite difficult
- o Neutral
- o Quite easy
- o Very easy

Why do you find this?
……
……

Do you already know which book you want to read next?
- o Yes *
- o No → choose a new book together with the student

* If this is a book from a series or genre that the student reads very often, you may suggest a different book which is also attuned to a student's reading level and interests.

Which book did you choose and why?

……
……

Any additional remarks:

……
……