

Chapter 7

7 Interest in Language Arts and Reading Competence in Secondary School

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Summary

Over the last 30 years, students' interests have increasingly been taken into account to explain individual differences in reading competence. In particular, the impact of students' interest in reading during preschool and primary school has been a topic of research. Fewer studies exist for students in secondary school, and only a limited number of studies have taken into account the development of the interests of secondary school students or have analyzed the impact of object-related individual interests on reading competence. In the present chapter, we address the missing link in this area of research by analyzing how students' interest in language arts and students' reading competence are related to each other in the first 2 years of secondary school. We found no direct effect of students' interest in

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language arts on their reading competence, but we did find an indirect influence that was mediated by the amount of time that students spent reading. In-depth analyses comparing the time spent reading across different types of texts show that this indirect influence can be traced back to the amount of time spent reading narrative texts. Moreover, these results do not differ by gender, immigration background, or type of school. Finally, our analyses emphasize that the development of a student's interest in language arts and the student's reading competence are bidirectionally related to each other.

Research on the development of motivation and achievement has shown that relations between these two constructs are best described as complex and multifaceted. Thereby, over the last 30 years, interests have increasingly been taken into account when formulating explanations for the development of students' reading competence (cf. Hidi, Renninger, & Krapp, 2004; Wigfield & Asher, 1984). The present chapter focuses on the concept of interest in language arts as an object-related individual interest and analyzes its relation to the development of students' reading competence.

Reading Competence and Interest in Language Arts – Theoretical Conceptions and Developmental Perspectives

Being able to read represents a core competence in everyday life as dealing efficiently with written text is fundamental for citizens living in modern societies around the world (OECD, 2003). Reading competence, in particular, refers to the ability to formulate a coherent representation of a text. The act of reading itself is a complex one, which covers subprocesses across the different levels of words, sentences, and text. In order to create a coherent representation of a text, the reader needs to apply - more or less consciously - general world knowledge, syntactic knowledge, specific content knowledge, and metacognitive knowledge (Graesser, Millis, & Zwaan, 1997; Kintsch, 1998). Thus, reading competence represents the result of an interactive process between the reader and the text (Artelt, et al., 2005; Kintsch, 1998).

The development of students' literacy generally begins within the context of the family, and some students are already able to read and write when they enter primary school (Baker & Scher, 2002; Hurrelmann, 2004). However, for the majority of students, learning to read and write in a systematic manner begins in primary school. Whereas basic reading skills primarily develop in preschool and primary school, the ability and routine to draw inferences, create meaning from larger units of text, as well as the competent use of text develops mainly in Grade 4 and above (cf. Chall, 1983; McElvany & Becker, 2010). In order to become more and more familiar with the act of reading and the demands of text comprehension, to improve one's reading skills, and to develop a repertoire of (meta)cognitive reading strategies, students must keep encountering written text and must spend a lot of time reading (cf. Paratore, Cassano, & Schickedanz, 2011; Pfof, Dörfler, & Artelt, 2010). Thus, in addition to the reader's cognitive skills and prior knowledge, the role of a reader's level of motivation has received increased attention. Beginning with the work of Paris, Lipson, and Wixson (1983), the reader's skill and will to read began to be regarded as complementary. Researchers have thus increasingly been taking the reader's interest into account when explaining literacy development (cf. Miller & Faircloth, 2009).

Students' Interest in Language Arts

Referring to the Person-Object Conception of Interest (Krapp, 2002), interest is regarded as a relational construct that represents a particular relationship between a person and an object. This object- or content-specificity is the main factor that distinguishes interest from other motivational concepts (e.g., intrinsic motivation; Hidi & Ainley, 2002). Accordingly, Krapp (2002) points to three general structural components that describe a particular interest: first, the concrete topic of interest, which represents a certain domain of knowledge; second, specific activities that are connected to the object of interest and in which individuals are engaged when working on interest-related tasks; finally, real objects toward which the specific interest is directed. According to these three components, we may characterize interest in language arts in the following way: the German language and German literature are regarded as the topics or domains of interest. For students who are interested in language arts, reading can be regarded as one of the specific activities, and books can

be seen as the typical objects of interest. Furthermore, interests are characterized by feeling- and value-related aspects, meaning that interest-related actions and contents have a subjective significance for the person and that the person likes to encounter them. Due to the positive feelings and significant personal value connected to this object or content, interested persons also generally have a tendency to enlarge their knowledge about the topic of interest and thus to improve their corresponding competencies (Krapp, 2000, 2002; Schiefele, 1999). These theoretical considerations are in line with research findings that have indicated that the connection between interest and achievement seems to get stronger as students grow older (Denissen, Zarrett, & Eccles, 2007; Schiefele, Krapp, & Winteler, 1992; Wigfield, et al., 1997). Finally, a person's interests can be divided into situational and individual components. Whereas situational interest describes a current engagement that occurs in and is created by a particular situation, individual interest depicts the dispositional structure of a person with related effects that tend to be long-lasting (Hidi & Renninger, 2006; Krapp, 2002). Correspondingly, before developing a dispositional interest, a person has to experience situational interest in a particular situation. Only if the engagement in a particular situation persists will the person be likely to develop an interest as a dispositional structure. Thus, to develop a long-lasting and profound individual interest, it is necessary to have the opportunity and will to re-engage in the interest-related activities (Hidi, et al., 2004; Hidi & Renninger, 2006; Renninger, 2000).

Following these theoretical considerations, the relation between interests and a person's competencies can be described in two different ways. On the one hand, competencies can be regarded as preconditions for the development of an interest. Due to the fact that a person's feeling of competence leads to positive feelings, the person is likely to develop an interest in topics that are related to activities in which he or she feels competent (cf. Daniels, 2008; Deci & Ryan, 2000; Krapp, 2005). On the other hand, it is assumed that people who have developed an interest in a particular domain tend to improve their interest-related competencies. Accordingly, competencies that develop through performing interest-related actions can also be regarded as consequences of a person's interest (cf. Krapp, 2000, 2002; Schiefele, 1999). Accordingly, because reading represents an interest-related activity, students'

reading competence can be regarded as a predictor as well as an outcome of students' interest in language arts.

Students' Interest in Language Arts and Reading Competence – Previous Research

Findings

For students in preschool and primary school, research findings have mainly indicated a positive effect of students' reading interest on their literacy development (e.g., Kirby, Ball, Geier, Parilla, & Wade-Wooley, 2011; Torppa, et al., 2007). With regard to secondary school students, comparable results have been reported concerning the positive relation between students' reading interest and their literacy (Möller & Schiefele, 2004). Furthermore, there is evidence that students' reading interest positively affects the amount of extracurricular reading that students do and thus their engagement in the reading process (e.g., Guthrie, Wigfield, Metsala, & Cox, 1999; McElvany, Kortenbruck, & Becker, 2008). As has been shown in various studies, the amount of reading, in turn, has a positive impact on reading competence (e.g., Anderson, Wilson, & Fielding, 1988; Guthrie, Schafer, & Huang, 2001; Pfof, et al., 2010). Thus, the positive influence of students' reading interest on their reading competence can be explained in part by increases in the reading practice of students who are interested in reading (Guthrie, et al., 1999; McElvany, et al., 2008; Wigfield & Guthrie, 1997). However, many of the studies that have analyzed students' interest in reading have shown some kind of design-based limitations such as using only teachers' (e.g., McKenna, et al., 1995) or parents' (e.g., Torppa, et al., 2007) reports to measure students' reading interest or by relying solely on cross-sectional data (e.g., Möller & Schiefele, 2004). The latter generally leads to an overestimate of the relation between students' interests and reading competence. Furthermore, the direction of influence remains unclear. Despite these limitations, from both a theoretical and an empirical point of view, there is reason to assume that in order to become a good reader, it is necessary to have reading-related skills at one's disposal but also to be willing to read. Previous research on students' interests and reading competence has revealed that empirical findings need to be distinguished according to the particular conceptualizations of interest they use. Especially when examining preschool and primary school students, previous studies have focused primarily on students' interest

in reading. Although interest in language arts and interest in reading are both regarded as domain-specific interests, they represent different motivational concepts with regard to the Person-Object Conception of Interest (Krapp, 2002). According to Rheinberg (1998), interest in reading represents an activity-related motivation because the impulse to engage in this certain activity lies in the activity itself. By contrast, interest in language arts is an object-related motivation due to the fact that the impulse to perform a certain activity lies in a particular object that is related to this activity. There is some discussion in the literature indicating that only object-related motivation should be regarded as an interest due to the fact that only this type of motivation fulfills the theoretical assumptions needed to distinguish between a person, an object of interest, and the interest-related action that connect them (e.g., Krapp, 2002; Rheinberg, 1998; Schiefele & Schiefele, 1997). Given that students' interest in language arts is theoretically distinct and separable from their interest in reading, the empirical findings that have been reported thus far concerning the relation between interest in reading and reading achievement are not directly generalizable to students' interest in language arts. Previous empirical findings concerning students' interests and the impact of these interests on students' reading competence in secondary school have mainly focused on their topic interests which covers the triggered interest when a particular topic is presented (e.g., Ainley, Hidi, & Berndorff, 2002; Hidi, 2001). As an example, Renninger (1992) reported that fifth- and sixth-grade students who were interested in a certain topic of a text read this text more accurately and were able to recall more information from it than students who were not interested in this topic. Moreover, Schaffner, Schiefele, and Schneider (2004) found a significant positive relation between topic interest and reading comprehension for 15-year-old students in Germany. Nevertheless, given that topic interest was measured as an interest in the particular topic of the texts that were used to measure students' reading competence, these results may have been influenced by individual or situational interest (Ainley, et al., 2002; Hidi, 2000, 2001). Accordingly, these empirical findings are also not directly generalizable to the influence of students' individual interest in language arts because they refer to a different theoretical conception of interest. Thus, whether students' interest in language arts impacts students' reading competence in the beginning of secondary school remains an open question.

There is also evidence for the opposite effect: Reading competence might not be just an outcome of students' interest; it might also predict it. Corresponding research findings have indicated that in order to feel competent, students need to receive individual feedback on their skills and successes as well as to experience an optimal fit between their individual competencies and the requirements of the task. This feeling of competence, in turn, leads to positive feelings and promotes the development of students' interests. Thus, students who feel competent as readers are expected to enjoy the act of reading and thus be more likely to develop an interest in reading-related domains of interest (cf. Becker, McElvany, & Kortenbruck, 2010; Deci & Ryan, 2000; Daniels, 2008). However, there seem to be no studies that have used a longitudinal design to analyze reciprocal effects between students' reading competence and interest in secondary school (cf. Denissen, et al., 2007; Retelsdorf, Köller, & Möller, 2011). In the domain of mathematics, however, Marsh, Trautwein, Lüdtke, Köller, and Baumert (2005) found a bidirectional link between interests and achievement for students in Grade 7. Furthermore, their results indicate a smaller influence of achievement on interests than the opposite path, thus suggesting that a strong performance in a certain domain is not sufficient for developing an interest in this domain (cf. Renninger, Ewan, & Lasher, 2002). Taken together, students' reading competence can be seen as a necessary but not sufficient condition for developing an interest in language arts.

Finally, when analyzing the development of students' interest across the secondary school years, the finding that interests during this time period tend to decrease has to be taken into account (e.g., Daniels, 2008; McElvany, et al., 2008; Lüftenegger, et al., 2012; Wigfield, et al., 1997). This decline is often interpreted as a process of interest differentiation that begins in secondary school. Thus, whereas young children show a universal interest in nearly all activities, older students begin to develop domain-specific interests. This effect results in the persistence of high levels of interest in some specific domains, whereas for the same students, decreasing interest levels can be found in other domains. As a consequence of such a process of differentiation, decreases in interest scores on average are to be expected and have been observed several times (e.g., Daniels, 2008; Denissen, et al., 2007; Wigfield, et al., 1997). Furthermore, these assumptions are in line with the aforementioned empirical finding that the relation between (reading) interest and achievement seems to grow stronger as

students grow older (Denissen, et al., 2007; Schiefele, et al., 1992; Wigfield, et al., 1997). Thus, students who develop a domain-specific interest across the school years persist in engaging in the interest-related activities of this particular interest, thus improving the competencies that are related to this interest. The associated positive feelings and feedback lead in turn to a continuously growing interest, and thus this interest tends to grow (Krapp, 2000; Schiefele, et al., 1992).

Students' Interest in Language Arts and Reading Competence – Potential Moderating Variables

It seems worthwhile to ask whether structural differences occur across certain subpopulations of students with regard to the relation between interest and reading competence. For example, Denissen, Zarrett, and Eccles (2007) found a weaker relation between interest and achievement for girls than boys. The authors interpreted this finding to reflect the idea that boys are mainly socialized to do well in particular domains, whereas girls are socialized to do well across domains (see also Logan & Johnston, 2009). Accordingly, boys primarily participate in domains they enjoy, whereas girls participate in all domains regardless of their interests (Schiefele, et al., 1992). In addition, students tend to view the act of reading as a typically female one (Eggert & Grabe, 2003; Millard, 1997; Philip, 2008). During adolescence, students' interests tend to develop in accordance with gender stereotypes, thus leading to a pattern of girls being more interested in reading-related activities (Hidi, et al., 2004; Meece, Glienke, & Burg, 2006; Renninger, 2000). Finally, there is evidence for a higher initial level of reading motivation as well as reading competence for girls than for boys, a difference that can mainly be explained by the greater amount of reading practiced by girls (e.g., Artelt, Naumann, & Schneider, 2010; Baker & Wigfield, 1999; Mullis, Martin, Foy, & Drucker, 2012; Wigfield & Guthrie, 1997).

Another potential moderator that should be taken into account is the type of school that students attend. Because the separation of students into the different types of schools is mainly based on students' school performance, students with severe reading deficits are more likely to attend schools in the lower (Hauptschule) or middle academic tracks (Realschule). Moreover, due to different institutional learning environments, further increases in these competence differences are expected (cf.

Pfost & Artelt, Chapter 8, this volume). With regard to the development of reading motivation, Retelsdorf and Möller (2008) reported that students attending upper academic track schools showed a higher initial level of reading motivation as well as a smaller decrease in reading motivation in comparison to students from lower and middle academic track schools. However, the impact of the type of school on the initial level as well as on the development of the students' interests remains unclear.

Finally students' immigration background should be taken into account as performance in written and spoken language depends on this variable (e.g., Baumert & Schümer, 2001; Chudaske, 2012; Naumann, Artelt, Schneider, & Stanat, 2010) although this effect is mainly attributable to differences in the often lower socio-economic backgrounds of the families (Marks, 2005). Even though parents born in a foreign country often show high educational aspirations, they frequently lag behind with regard to the opportunities to promote their children in terms of reading competence (e.g., Baumert & Schümer, 2001; Merckens & Nauck, 1993; Stanat, Rauch, & Segeritz, 2010). These findings hold for primary as well as secondary school students. Thus, whereas the enhanced performance of students without an immigration background with regard to their reading competence is evident, the impact of students' immigration background on their interests remains unclear.

In summary, students' reading competence and their interests are still subject to change across the secondary school years. However, previous research has mainly focused on students in primary school and their interest in reading, whereas the few studies that have analyzed students in secondary school have primarily analyzed topic interests and competencies in mathematics, and/or they did not account for reciprocal effects. Moreover, there are only a few studies that have used a longitudinal design. With regard to research on differential developments, students' reading competence has been studied intensively, whereas studies analyzing the effect of moderating factors on students' interests have mainly focused on students' gender. For this reason, the present chapter will focus on an object-related individual interest: the students' interest in language arts and its relation to the development of reading competence. To do so, we used longitudinal data measured during the first 2 years of secondary school. We also looked for the existence of structural differences according to students' gender, type of school, and immigration background.

Research Questions

In the present chapter, the following research questions were addressed:

1. Do the initial levels of students' interest in language arts, reading competence, and amount of extracurricular reading differ according to their gender, the type of school they attend, or their immigration background?

The first research question asks whether and to what extent students' gender, type of school, and immigration background lead to differences in the initial levels of their interest in language arts, reading competence, and amount of reading.

2. Does students' interest in language arts impact their reading competence? If so, is this effect mediated by the amount of reading that students do and does this effect vary across groups?

The second question asks whether and to what extent students' interest in language arts impacts on their reading competence. Based on previous empirical findings, a positive impact of the students' interest in language arts on their reading competence was expected. Moreover, in line with the findings and assumptions with regard to the behavioral effects of interest (Guthrie, et al., 1999; McElvany, et al., 2008; Krapp, 2000), we expected that this influence would be mediated by the amount of reading that students do: Interest in language arts should lead to large amounts of reading, which in turn should result in an increase in reading competence. Furthermore, we tested for structural differences in this relation by taking into account students' gender, immigration background, and the type of school as potential moderating factors.

3. Is there a connection between the development of students' reading competence and the development of the students' interest in language arts between Grade 5 and Grade 6?

As outlined above, in addition to being an outcome of a student's interest in language arts, reading competence can also be viewed as a predictor of the development of this interest. As the development of this interest is regarded as being strongly connected to feelings of competence, students with a below-average development of reading competence should experience more negative feelings while reading, leading to a decreasing interest in language arts. Thus, rather than focusing on a unidirectional model of influence, reciprocal effects were considered.

Method

Design and Participants

All analyses were based on data from $N = 1,631$ students who participated in the BiKS-8-14 panel study in Grades 5, 6, and 7 (assessment waves 4, 5, and 6 of the study; cf. Lorenz, Schmitt, Lehl, Mudiappa, & Roßbach, Chapter 2, this volume). These 1,631 students (865 girls, 766 boys) attended 62 different secondary schools with an average of 23 students participating per school. In total, 979 (60.0%) of these students attended upper academic track schools, 308 (18.9%) middle academic track schools, and 344 (21.1%) lower academic track schools. The average age of the students in Grade 5 was 11.2 years ($SD = 0.5$). With regard to immigration background, the sample contained 226 (15.7%) students with one or two parents born abroad.

Measures

Interest in language arts. Interest in language arts was measured by a student questionnaire in Grades 5 and 6. The emotional and value-related aspects of the construct of interest were assessed by two items (“Reading and writing German texts by myself is great fun for me”; “It is important to me to become familiar with the German language and literature”). A third item measured whether and the extent to which students were willing to engage in interest-related activities during their spare time (“I am willing to use some of my spare time to get to know the German language and literature better”). The items were adapted from the BIJU study (Baumert, Gruehn, Heyn, Köller, & Schnabel, 1997) and were answered on a 5-point scale: 1 = *not at all*, 2 = *a little*, 3 = *moderately*, 4 = *fairly*, and 5 = *very much*. At both waves of assessment, the reliability of the scale was acceptable, especially when considering the small number of items used (Grade 5: Cronbach’s $\alpha = .66$, Grade 6: Cronbach’s $\alpha = .76$).

Reading competence. In Grade 5, reading competence was assessed by a sample of six short texts with a total of 43 multiple-choice items developed by the BiKS research group (Karing, et al., in prep.). Students had to read a given text, search relevant information, and generate more or less demanding inferences from the text to answer the given multiple-choice items. In Grade 6, three texts with a total of 31 multiple-

choice items were used. Finally, in Grade 7, again, three texts with 26 multiple-choice items were used. For the three points of measurement, a common item design with nonequivalent groups/anchor-item test design was applied (Holland, Dorans, & Peterson, 2007; Kolen & Brennan, 2004); this allowed the estimation of students' reading competence to be placed on a common metric within an IRT framework. Item difficulty parameters for the same items across different assessments were set to be equal. In a first run, for the items on the Grade 5 reading competence test, the item difficulty parameters were estimated with a 1-parameter Rasch model by using the ConQuest software package (Wu, Adams, Wilson, & Haldane, 2007). The model was identified by setting the mean of the item difficulty parameters to zero. Item difficulty parameters of the Grade 6 and Grade 7 reading competence tests were estimated in subsequent second/third runs using the fixed item difficulty parameters from the foregoing point of measurement. Individual students' abilities were estimated by weighted likelihood estimates (WLEs) for every point of measurement. The reliabilities (WLE reliability) of the reading competence measures for all assessments were satisfactory (Grade 5 reliability = .78, Grade 6 reliability = .77, Grade 7 reliability = .76).

Time spent reading. The time spent in extracurricular reading was measured in telephone interviews with the students' parents in Grades 5, 6, and 7. Using an open scale, parents were asked to indicate how many hours per week their child reads for fun. Outliers were adjusted to a maximum of 20 hours per week, which approximately equals three standard deviations above the mean (cf. Pfof, et al., 2010).

Extracurricular reading behavior. Finally in Grade 7, extracurricular reading behavior was assessed by directly asking the students. Students were asked to indicate on a four point scale (1 = *almost never or never*, 2 = *several times a month*, 3 = *several times a week*, and 4 = *several times a day*) how often they read outside school. The ratings concerning the question ("How often do you read outside school...?") were asked separately for different types of text. The subsequent text types were used in this chapter: journals or newspapers; comics; novels, stories, or tales; and nonfiction books (e.g., technical or science).

Statistical Analyses

All statistical analyses were computed using SPSS 19 and Mplus 6.11 (Muthén & Muthén, 1998-2010). The first research question was examined by computing ANOVAs as well as standardized effect sizes using SPSS. The second research question was analyzed by applying structural equation modeling using the Mplus command *type = complex* to take the nested data structure into account. The full information maximum likelihood (FIML) estimation option in Mplus was used to handle missing data (cf. Preacher, Wichman, MacCallum, & Briggs, 2008). The percentage of missing data on the variables used in the following analyses varied between 0.1% (interest in language arts and reading competence in Grade 5) and 29.6% (reading competence in Grade 7).

To evaluate whether all the path analyses had to be computed as multigroup comparisons or whether it was sufficient to take the potential moderating variables into account as covariates, we tested for the existence of structural differences depending on the type of school, students' gender, and their immigration background. To do so, multigroup comparisons using the Satorra-Bentler-scaled chi-square difference test (Bryant & Satorra, 2011) were conducted to compare the adequacy of different equality constraints. In the first most restrictive model, the intercepts, variances, covariances, and regression paths were set equal between the comparison groups, thus suggesting that the particular grouping variable had no differential impact on the model variables. In the second model, the equality constraint of the intercepts was removed from the model, thus assuming that the intercepts varied between the comparison groups. In the third model of multigroup comparisons, the variances were additionally freely estimated, thus assuming that the model variables revealed group-specific variances. In the fourth model, the constraint of equal regression paths was additionally set free, thus allowing group differences in the structure of the relations of the model variables. In the fifth model, the covariances were also freely estimated. Thus, to test for the existence of structural differences depending on the potential moderating variables, the fourth model was of particular importance. A significant improvement in model fit from the third to the fourth model would reveal the existence of structural group differences. The model fit of all path analyses was evaluated by referring to three goodness-of-fit indices: The root mean

square error of approximation (RMSEA), the chi-square test, and the comparative fit index (CFI; Preacher, et al., 2008). Models with RMSEA values of .05 or less, nonsignificant chi-square values, and CFI values above .95 were deemed acceptable (Hooper, Coughlan, & Mullen, 2008; Hu & Bentler, 1999).

The third research question was addressed by running a repeated-measures analysis of variance using SPSS. Moreover, these results were additionally tested by computing difference scores using Mplus.

Results

Descriptive Statistics and Correlations

The mean scores and standard deviations of all measures are presented in Table 1.

Table 1. Descriptive Statistics: Interest in Language Arts, Reading Competence, Time Spent Reading, and Reading Behavior

	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>N (Miss.)</i>
Grade 5					
Interest in language arts	3.18	0.87	1	5	1630 (1)
Reading competence (WLEs)	0.729	0.770	-	-	1629 (2)
Time spent reading	4.08	3.78	0	20	1429 (202)
Grade 6					
Interest in language arts	2.84	0.95	1	5	1409 (222)
Reading competence (WLEs)	1.076	0.957	-	-	1330 (301)
Time spent reading	5.00	4.46	0	20	1297 (334)
Grade 7					
Reading competence (WLEs)	1.275	1.126	-	-	1149 (482)
Time spent reading	4.74	4.06	0	20	1175 (456)
Reading behavior: Narrative texts	2.36	1.12	1	4	1271 (360)
Reading behavior: Nonfictional texts	1.55	0.80	1	4	1275 (356)
Reading behavior: Journals	2.42	0.92	1	4	1272 (359)
Reading behavior: Comics	1.67	0.94	1	4	1271 (360)

Note. *Miss* = Missing values; *Min* = theoretical minimum; *Max* = theoretical maximum; WLEs = weighted likelihood estimates.

With regard to the development of students' reading competence, the descriptive results indicated a steady increase from Grade 5 to Grade 7. The descriptive results of students' interest in language arts suggested a negative mean trend between Grade 5

and Grade 6. The average time spent reading increased from Grade 5 to Grade 6, whereas it decreased slightly in Grade 7. The cross-sectional descriptive analysis of students' reading behavior indicated that the students read journals and narrative texts more often than nonfictional texts and comics.

Research Question 1: Do the initial levels of students' interest in language arts, reading competence, and amount of extracurricular reading differ according to their gender, the type of school they attend, or their immigration background?

Additional descriptive analyses were computed with regard to differences on the potential moderating variables gender, type of school, and immigration background. To do so, the mean scores of students' interest and reading competence were compared between the different groups using ANOVAs (see Table 2).

Table 2. Average Scores and Standard Deviations of Students' Interest in Language Arts, Reading Competence, and Time Spent Reading in Grade 5 and Grade 6 Separated by Students' Gender, Immigration Background, and Type of School

	Gender			Type of school				Immigration background		
	Male	Female		Upper school track	Middle school track	Lower school track		No	Yes	
Grade 5	M (SD)	M (SD)	p-value	M (SD)	M (SD)	M (SD)	p-value	M (SD)	M (SD)	p-value
Interest in language arts	2.99 (0.90)	3.34 (0.81)	<.001	3.24 (0.82)	2.99 (0.92)	3.18 (0.94)	<.001	3.14 (0.89)	3.31 (0.82)	<.01
Reading competence	0.70 (0.82)	0.76 (0.72)	n.s.	1.04 (0.66)	0.55 (0.60)	0.01 (0.65)	<.001	0.76 (0.76)	0.67 (0.78)	n.s.
Time spent reading	4.28 (3.74)	4.44 (3.77)	<.001	4.61 (3.89)	3.36 (3.67)	3.05 (3.14)	<.001	4.02 (3.65)	4.26 (3.95)	n.s.
Grade 6										
Interest in language arts	2.63 (0.95)	3.02 (0.91)	<.001	2.89 (0.95)	2.64 (0.97)	2.87 (0.89)	<.01	2.81 (0.95)	2.94 (0.95)	n.s.
Reading competence	0.91 (0.98)	1.22 (0.91)	<.001	1.43 (0.87)	0.81 (0.72)	0.10 (0.69)	<.001	1.13 (0.95)	0.90 (0.98)	<.01
Time spent reading	4.28 (4.19)	5.65 (4.60)	<.001	5.73 (4.53)	4.07 (4.17)	3.46 (3.90)	<.001	5.03 (4.36)	4.53 (4.51)	n.s.

Note. The p-values indicate the significance of the mean score differences by students' gender/ type of school/ immigration background using ANOVAs. n.s. = statistically not significant.

Differential analyses for boys and girls indicated that girls reported a higher initial level of interest in language arts (Grade 5: $F(1, 1629) = 67.37, p < .001, d = 0.40$; Grade 6: $F(1, 1408) = 62.46, p < .001, d = 0.41$) and performed better on the reading comprehension test, although the effect was significant only in Grade 6 (Grade 5: $F(1, 1628) = 2.11, p = .15, d = 0.08$; Grade 6: $F(1, 1329) = 37.65, p < .001, d = 0.32$). Likewise, boys reported doing less reading outside school than girls (Grade 5: $F(1, 1428) = 15.12, p < .001, d = 0.20$; Grade 6: $F(1, 1296) = 31.20, p < .001, d = 0.31$). Differences in the initial levels of students' interest in language arts and reading competence according to the particular school track they attend were also analyzed by computing ANOVAs. To compare the three different academic school tracks with each other, planned contrasts were computed additionally. Results for the comparison of students' reading competence between the different school tracks indicated that students attending upper academic track schools performed better on the reading comprehension test than students attending middle (Grade 5: $t(1626) = 11.40, p < .001, d = 0.64$; Grade 6: $t(554) = 11.68, p < .001, d = 0.65$) and lower (Grade 5: $t(1626) = 25.30, p < .001, d = 1.34$; Grade 6: $t(445) = 24.24, p < .001, d = 1.39$) academic track schools. Students attending middle academic track schools, in turn, outperformed students from lower academic track schools (Grade 5: $t(1626) = 10.68, p < .001, d = 0.70$; Grade 6: $t(488) = 11.27, p < .001, d = 0.74$). With regard to interest in language arts, students attending upper academic track schools reported nearly the same level of interest as students attending lower academic track schools (Grade 5: $t(541) = 1.03, p = .31, d = 0.07$; Grade 6: $t(1406) = 0.21, p = .83, d = 0.02$). But both students attending upper (Grade 5: $t(472) = 4.25, p < .001, d = 0.29$; Grade 6: $t(1406) = 3.75, p < .001, d = 0.26$) and lower (Grade 5: $t(643) = 2.62, p = .009, d = 0.22$; Grade 6: $t(1406) = 2.86, p = .004, d = 0.24$) academic track schools reported a higher interest in language arts than students attending middle academic track schools. With regard to the amount of extracurricular reading, upper academic track school students read significantly more (more hours per week) during their spare time than students attending middle (Grade 5: $t(494) = 4.91, p < .001, d = 0.33$; Grade 6: $d = 0.37, t(450) = 5.43, p < .001$) and lower (Grade 5: $t(535) = 6.72, p < .001, d = 0.41$; Grade 6: $t(425) = 7.55, p < .001, d = 0.51$) academic track schools. However, the comparison between students attending middle and lower academic track schools showed no significant differences with regard to their amount of reading during spare time (Grade 5: $t(539) = 1.06, p = .288, d = 0.08$; Grade 6:

$t(482) = 1.66, p = .098, d = 0.14$). With regard to students' immigration background, we first analyzed whether students with one parent born abroad differed in their interest in language arts, reading competence, and time spent reading from students with two parents born abroad so that it would be necessary to differentiate between these two subgroups of students with immigration backgrounds. The analyses revealed significant differences only with regard to reading competence in Grade 5. Because there were almost no differences between these two immigration subgroups, the following analyses differed only between students with an immigration background (one or two parents born abroad) and without an immigration background (both parents born in Germany). Differential analyses between students with and without an immigration background revealed that students' immigration background made a difference inasmuch as students with an immigration background - compared to students whose parents were both born in Germany - achieved lower scores on the reading competence test although the difference was statistically significant only in Grade 6 (Grade 5: $F(1, 1441) = 2.31, p = .13, d = 0.12$; Grade 6: $F(1, 1189) = 8.47, p = .004, d = 0.24$). However, students with an immigration background reported a greater interest in language arts, although this difference was statistically significant only in Grade 5 (Grade 5: $F(1, 1442) = 6.79, p = .009, d = 0.20$; Grade 6: $F(1, 1260) = 2.99, p = .08, d = 0.14$). With regard to students' time spent reading during their spare time students with and without immigration background showed no differences in Grade 5 and 6 (Grade 5: $F(1, 1325) = 0.68, p = .41, d = 0.06$; Grade 6: $F(1, 1186) = 1.87, p = .17, d = 0.11$).

Taken together, these first differential analyses indicated substantial influences of the potential moderating variables gender and type of school on the outcome variables of interest, whereas with regard to students' immigration background, only minor effects were shown.

Table 3 depicts correlations between students' interest in language arts, reading competence, and time spent reading in Grades 5, 6, and 7, and indicates that all variables were positively correlated.

Table 3. Correlations between Interest in Language Arts, Reading Competence, and Time Spent Reading in Grades 5, 6, and 7

Measure	1	2	3	4	5	6	7	8
1. Interest in language arts (G5)	-							
2. Interest in language arts (G6)	.52*	-						
3. Reading competence (G5)	.07*	.07*	-					
4. Reading competence (G6)	.09*	.16*	.59*	-				
5. Reading competence (G7)	.12*	.13*	.55*	.64*	-			
6. Time spent reading (G5)	.19*	.20*	.29*	.28*	.32*	-		
7. Time spent reading (G6)	.17*	.19*	.24*	.28*	.30*	.52*	-	
8. Time spent reading (G7)	.18*	.24*	.21*	.28*	.31*	.52*	.55*	-

Note. $N = 1,631$; G = Grade.

* $p < .05$.

A closer look at the depicted correlations reveals that interest in language arts was more highly correlated with time spent reading than with reading competence. Furthermore, reading competence showed higher correlations with students' amount of extracurricular reading than with their interest in language arts. Additional analyses were computed to take into account the particular text types that were read by the students (see Table 4).

Table 4. Correlations between Reading Competence, Time Spent Reading, and Reading Behavior in Grade 7

Measure	1	2	3	4	5	6
1. Reading competence	-					
2. Time spent reading	.33*	-				
3. Reading behavior: Narrative texts	.41*	.47*	-			
4. Reading behavior: Nonfictional texts	.06*	.09*	.18*	-		
5. Reading behavior: Journals	.09*	.07*	.16*	.17*	-	
6. Reading behavior: Comics	.03	.12*	.06*	.22*	.16*	-

* $p < .05$.

These additional results in Grade 7 revealed that students' interest in language arts and reading competence were most highly correlated with the amount of narrative reading that the students did. Students' interest in language arts was also significantly correlated with the amount of reading of nonfictional texts and journals. However, the amount of reading of both text types was not correlated at all (for nonfictional texts) or

was only moderately correlated (for journals) with students' reading competence in Grade 7. Last, the amount of comic reading was not related to interest in language arts or reading competence. In conclusion, the correlations provide a first hint for a potential indirect relation between students' interest in language arts and their reading competence which is mediated by the time students spend reading. Moreover, especially students' reading behavior of narrative texts was positively related to students' interest in language arts and reading competence.

Longitudinal Data Analysis

Research Question 2: Does students' interest in language arts impact their reading competence? If so, is this effect mediated by the amount of reading that students do and does this effect vary across groups?

In the first step of this analysis, the relations between interest in language arts and reading competence in Grade 5 and Grade 6 were tested for structural differences depending on school type, students' gender, as well as immigration background. To do so, a cross-lagged panel model (see Figure 1) was computed using type of school, gender, and immigration background as separate grouping variables in a multigroup model to compare the adequacy of different equality constraints. In the most restricted model, mean scores, variances, co-variances, and regression paths of the interest in language arts and reading competence in Grade 5 and Grade 6 were set equal, thus suggesting that the particular grouping variable had no differential impact on the model variables. The fit parameters indicated that the estimated coefficients did not fit the empirical data for all three grouping variables (see Table 5). Thus, in the second step, mean scores of the model variables were freely estimated, thus assuming that level differences existed between groups. Confirming the results of the first research question, this step resulted in a significant improvement in the model fit compared to the previous restricted model, thus indicating that all grouping variables had a differential impact on the mean scores of the model variables. Thereupon, the variances were also estimated freely. Whereas, when immigration background was used as the grouping variable, these model modifications did not improve the model fit further, the fit indices of the other two comparison models improved significantly when the variances were also estimated freely (Model 3). However, setting the

estimation of the regression paths free in the fourth model did not result in a significant improvement in the model fit, thus indicating that the particular structural influences between the model variables did not differ between the categories of the grouping variables. In the same manner, the mediation model presented in Figure 2 was analyzed for the existence of structural differences. Again, differences occurred with regard to the initial levels of the model variables. However, there were no structural differences across the groups. Thus, based on these results, it is not necessary to compute multigroup comparison models but to use gender, type of school, and immigration background as covariates in a single group model.

Table 5. Examining Structural Differences according to Students' Gender, Type of School, and Immigration Background with Regard to the Relation of Students' Interest in Language Arts and Reading Competence in Grade 5 and Grade 6 (see Figure 1)

	Model 1	Model 2	Model 3	Model 4
Gender differences				
χ^2 value (df)	120.843 (14)	30.451 (10)	8.465 (6)	5.014 (4)
RMSEA	.097	.050	.022	.018
CFI	.925	.986	.998	.999
AIC	14433.204	14327.855	14309.484	14310.223
TRd ^a (delta df)	120.843 (14)	82,819 (4)	21.16 (4)	3.741 (2)
p-value	< .05	< .05	< .05	> .05
Differences by type of school				
χ^2 value (df)	768.067 (28)	56.337 (20)	28.516 (12)	20.528 (8)
RMSEA	.220	.058	.050	.054
CFI	.000	.951	.978	.983
AIC	14433.204	13726.117	13705.010	13707.074
TRd ^a (delta df)	768.067 (28)	931.403 (8)	25.92 (8)	7.952 (4)
p-value	< .05	< .05	< .05	> .05
Differences by immigration background				
χ^2 value (df)	32.371 (14)	13.487 (10)	12.440 (6)	7.405 (4)
RMSEA	.043	.022	.039	.034
CFI	.985	.997	.995	.997
AIC	12841.512	12825.062	12830.716	12830.082
TRd ^a (delta df)	32.371 (14)	16.814 (4)	1.828 (4)	5.303 (2)
p-value	< .05	< .05	> .05	> .05

Note. Model 1 = fixed mean values, variances, covariances, and regression paths; Model 2 = fixed variances, covariances, and regression paths; Model 3 = fixed covariances and regression paths; Model 4 = fixed covariances.

^aSatorra-Bentler-scaled χ^2 difference test.

In the first structural equation model, the relation between interest in language arts and reading competence in Grade 5 and Grade 6 was analyzed (Figure 1) by specifying a cross-lagged path model controlling for the impact of the type of school, gender, and immigration background as covariates. According to the results, both constructs could be characterized as stable across the two assessments. Furthermore, the cross-lagged paths indicated that interest in language arts did not affect reading competence at the subsequent assessment, and students' reading competence in Grade 5 did not impact students' interest in language arts in Grade 6.

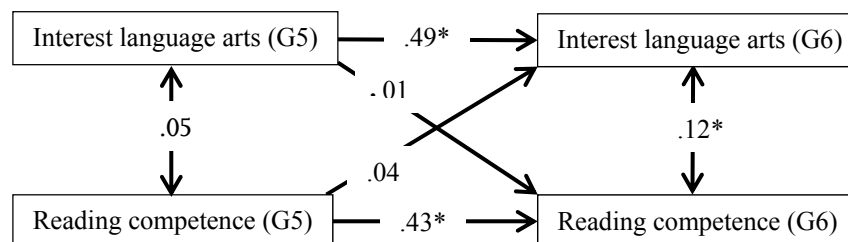


Figure 1. Associations between interest in language arts and reading competence in Grade 5 and Grade 6 taking into account students' gender, type of school, and immigration background as covariates (standardized path coefficients β). $N = 1,631$; G = Grade. $*p < .05$.

Putting these results together, we concluded that there was a significant relation between students' interest in language arts and reading competence controlling for background variables, but only in Grade 6. However, when controlling for Grade 5 reading competence, our analysis did not reveal a direct effect of students' interest in language arts in Grade 5 on their reading competence in Grade 6; thus, the research hypothesis related to the second question was not supported. Furthermore, the reciprocal effect of students' competencies on their interest in language arts was not significant.

Despite these findings, we analyzed whether there was at least a tendency toward an indirect effect of students' interests in language arts on their reading competencies mediated by students' extracurricular reading behavior. The corresponding path model is depicted in Figure 2. Controlling for students' reading competence in Grade 5, results for gender, type of school, and immigration background indicated a significant

effect of interest in language arts on the amount of time students spent doing extracurricular reading. Again, students' interest in language arts in Grade 5 did not directly affect their reading competence in Grade 6. Extracurricular reading behavior, however, was positively related to the students' reading competence in Grade 6. Taken together, we found an indirect effect of interest in language arts in Grade 5 on students' reading competence in Grade 6 mediated by students extracurricular reading behavior ($\beta_{\text{indirect}} = .02, p < .001$).

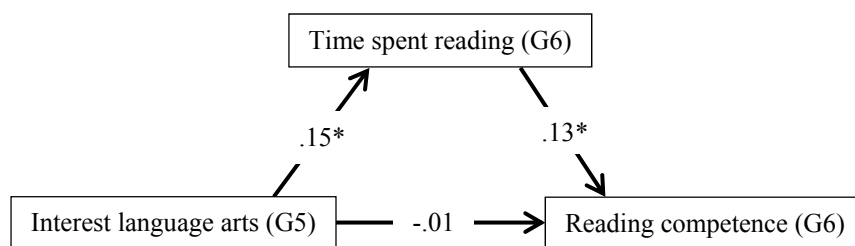


Figure 2. Indirect relation between interest in language arts in Grade 5, amount of reading in Grade 6, and reading competence in Grade 6 taking into account students' previous reading literacy in Grade 5, gender, type of school, and immigration background as covariates (standardized path coefficients β). $N = 1,631$; G = Grade. $*p < .05$.

Moreover, we were able to replicate and improve this connection by analyzing interest in language arts in Grade 6 and students' time spent reading as well as reading competence in Grade 7 accounting for the same background variables ($\beta_{\text{indirect}} = .03, p < .001$). Because we additionally measured how often students read different text types in Grade 7, we were able to analyze whether this indirect relation could be traced back to particular text types. The comparison between narrative texts, nonfictional texts, journals, and comics indicated that -according to the descriptive analyses - the indirect relation between interest in language arts and reading competence could be traced back to how often students read narrative texts. The specific indirect effect again increased to $\beta_{\text{indirect}} = .04 (p < .001)$, controlling for prior performance (reading competence in Grade 6), gender, type of school, and immigration background. The other text types did not significantly connect these two constructs when controlling for the same background variables (nonfictional texts: $\beta_{\text{indirect}} = .004, p = .521$; journals: $\beta_{\text{indirect}} = .002, p = .388$; comics: $\beta_{\text{indirect}} = .001, p = .521$).

Research Question 3: Is there a connection between the development of students' reading competence and the development of the students' interest in language arts between Grade 5 and Grade 6?

The question of whether or not students' reading competence is related to their interest development was examined by using a repeated-measures analysis of variance. Therefore, the development of the students' interest in language arts from Grade 5 to Grade 6 was included as the dependent variable, whereas the development of their reading competence was included as the independent variable. To examine whether or not different courses of competence development are related to different courses of interest development, the students' development of reading competence was classified relative to all students in the sample: In a first step, students were classified into three groups, separately for Grade 5 and Grade 6, by defining students with a reading competence score of one standard deviation above the average as students with a *high relative reading competence* and students with a score of one standard deviation below the average as students with a *low relative reading competence*. Students in between these two boundaries were defined as students with an *average relative reading competence*. In a second step, students were classified as having an increased, a decreased, or a stable relative reading competence according to the change in their classification from Grade 5 to Grade 6. The frequency distribution of this new variable *grouped relative reading competence development* indicated that out of a total of 1,328 students who were included in the analyses, over half of the students (57.4%) had a stable relative reading competence from Grade 5 to Grade 6 (see Figure 3). Approximately one third of the students (33.4%) were classified as having an increasing relative reading competence, and 9.4% of the students had a decreasing relative reading competence.

Relative reading competence		Development of relative reading competence
Grade 5	Grade 6	
Medium	High	Increasing relative reading competence (33.4%)
Low	High	
Low	Medium	
High	High	Stable relative reading competence (57.4%)
Medium	Medium	
Low	Low	
High	Medium	Decreasing relative reading competence (9.4%)
High	Low	
Medium	Low	

Figure 3. Classification of the development of students’ relative reading competence from Grade 5 to Grade 6. *N* = 1,328.

Results of the repeated-measures analysis of variance indicated a significant main effect of time, $F(1, 1324) = 157.10, p < .001$, part. $\eta^2 = .106$, indicating that on average, the developmental trend of the students’ interest in language arts was decreasing. Whereas there was no main effect of grouped relative reading competence development on students’ interest in language arts, $F(2, 1324) = 2.12, p = .12$, part. $\eta^2 = .003$, a significant interaction effect was found, $F(2, 1324) = 4.70, p = .01$, part. $\eta^2 = .007$. As shown in Figure 4, the decrease in interest in language arts was significantly accelerated for students in the decreasing relative competence group. Thus, a decreasing relative reading competence score was accompanied by a more markedly decreasing interest in language arts.

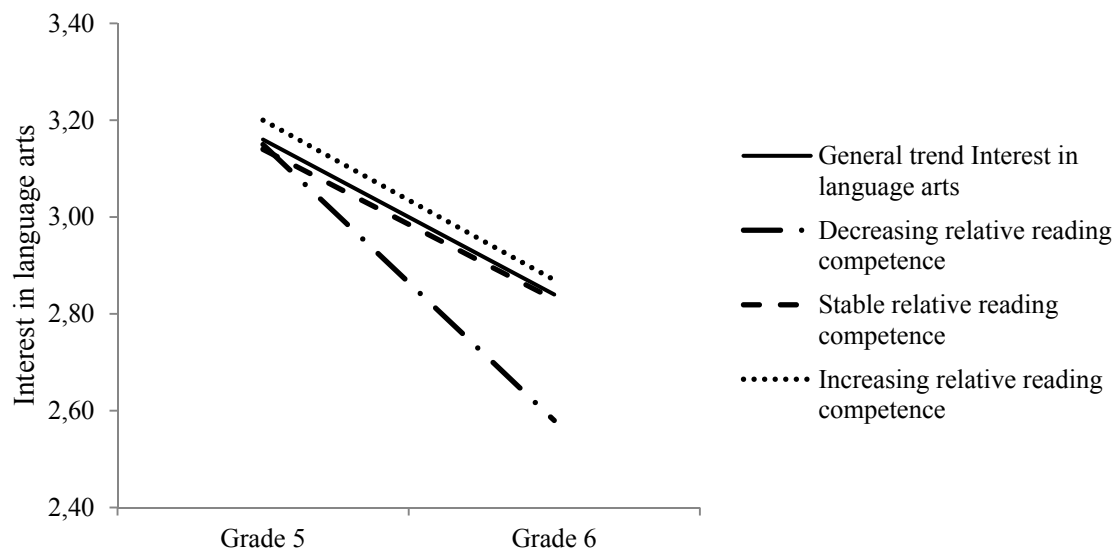


Figure 4. The development of students' interest in language arts depending on the students' development of relative reading competence classified into three groups. $N = 1,328$.

A change model was also computed to additionally test the second research question. The results reinforced the presented conclusions, indicating that the initial level of reading competence was not significantly correlated with interest in language arts, but that there was a small although significant correlation between the difference scores of the two constructs ($r = .09$, $p = .004$). Thus, the overall correlations also indicated that the particular developmental processes of the students' interest in language arts and reading competence from Grade 5 to Grade 6 influenced each other.

Discussion

The aim of this chapter was to analyze the relation between students' interest in language arts and the development of their reading competence in the first 2 years of secondary school. Contrary to our expectations, the presented results indicated no direct effect of students' interest in language arts on their reading competence. However, we were able to show an indirect connection between these two measures through the amount of extracurricular reading that the students did. Additional analyses showed that this indirect relation could be traced back to how often the students read narrative texts. Moreover, we analyzed whether or not these results held

when controlling for students' gender, type of school, and immigration background. These analyses revealed unique differences in the initial levels of students' interest in language arts, reading competence, as well as time spent reading but no structural ones. With regard to the third research question, the results indicated that a relative decrease in reading competence was attended by a more pronounced decrease in the students' interest in language arts. Thus, the presented results supported a reciprocal relation between the development of students' reading competence and interest in language arts.

In contrast to previous studies that have examined the impact of interests on reading competence, we analyzed a domain-specific individual interest, which is more distal from the act of reading and the reading test than previously researched general interests in reading interest or topic interest. In the current study, interest in language arts was conceptualized as an object-related motivation and thus represented a complex construct of interest that contains the act of reading in only an instrumental way. This unique conception of interest could provide one possible explanation for why the direct link between students' reading competence and interest in language arts was not found in our study. Thus, students could be interested in language arts but might use other interest-related activities to engage in it (e.g., attending a lecture or playing language games). According to our results, students who are interested in language arts will show increases in their reading competence only if, due to this high interest in language arts, they also engage in large amounts of reading.

A second explanation refers to the particular situation in which measurements are taken. According to Köller, Baumert, and Schnabel (2000), students are mainly extrinsically motivated in the school context as well as when taking achievement tests. Thus, perhaps a student's particular interest would not additionally affect the student's achievement on the test because it is masked by the student's extrinsic motivation in the test situation, such as the motivation to achieve good marks or test scores. By contrast, in situations that are characterized by intrinsic motivation, students who do not have an interest in language arts would be expected to be less motivated to read, whereas interested students should read more continuously (Köller, et al., 2000). In addition, whereas students' spare time offers them the opportunity to engage in many different activities, school time is mainly characterized by a lack of choice with regard

to activities. Thus, during spare time, students' interests can be operative in determining their actions and, as a result, may have a positive effect on students' competence development (Baker & Wigfield, 1999; Köller, et al., 2000; McElvany, et al., 2008). In accordance with this idea, we were able to show that students who were interested in language arts had significantly more often chosen to read in their spare time, thus improving their reading competence. Therefore, with regard to a long-lasting impact of students' interest in language arts, we expect that this interest will develop a direct effect on students' reading competence in the higher secondary school grades. This expectation is further underlined by the presented results, which revealed that correlations and influences became stronger across the two measurement points. These findings correspond to previous studies that found increasing correlations within interest domains and decreasing correlations between different ones as well as studies that found increasing relations between interests and reading competence over time which were interpreted to indicate a process of increasing consolidation of students' interest (Denissen, et al., 2007; Schiefele, et al., 1992; Wigfield, et al., 1997).

The roles of the proposed moderating variables (i.e., gender, type of school, and immigration background) were addressed by our first and second research questions. The analyses of these potential moderating variables indicated no structural differences beyond differences in the mean scores. Thus, according to the type of school, the reported results did not support the existence of institutional effects on the relation between students' interest in language arts and their reading competence. However, students attending upper academic track schools showed a greater interest in language arts and a higher reading competence, thus supporting Retelsdorf and Möller's (2008) findings. Analyses with regard to the influence of students' gender on the initial competence and interest levels supported the results that were noted from previous studies (e.g., Baker & Wigfield, 1999; Wigfield & Guthrie, 1997): Girls reported a greater interest in language arts, a greater amount of reading, and achieved a higher reading competence than boys did. However, our results emphasize that there are no structural differences according to students' gender. This finding contradicts prior research that indicated a weaker relation between achievement and interest for girls than for boys. These differential structural relations were interpreted to be the result of gender differences in the socialization process whereupon girls are socialized to do

well in many different domains, regardless of their interests, whereas boys are socialized to do well in the particular domains in which they are interested (Denissen, et al., 2007; Schiefele, et al., 1992). With regard to the constructs that were analyzed in this chapter, it seems that the observed gender differences in reading competence can be traced back to gender differences in attitudes toward reading but not to the existence of gender-specific mechanisms that link students' interest in language arts to reading competence. The different attitudes may be caused by the previously mentioned gender stereotype (i.e., that the act of reading is mainly a female activity; Hidi, et al., 2004; Millard, 1997; Renninger, 2000). With regard to immigration background, the reported results support the findings of previous studies in indicating that students with an immigration background show a lower reading competence than students without an immigration background (Baumert & Schümer, 2001; Chudaske, 2012; Schleicher, 2006). The reported amount of extracurricular reading showed no significant differences with regard to the initial level. However, students with an immigration background reported a greater interest in language arts than students who did not have an immigration background, thus contradicting the previously presented indirect relation between these three constructs. Thus, a higher interest in language arts did not lead to more extracurricular reading as one of the interest-related actions. It is conceivable that students with an immigration background tend to focus more on the language-related aspects of this interest than on the literature-related aspects because language-related aspects are of more importance in their everyday lives. As a result, other interest-related actions (e.g., taking a language course, playing language games, or listening to CDs) could be of more importance to them when engaging in actions that are related to their interest in language arts. Another possible explanation concerns socially desirable responding. Students with an immigration background might think that they are expected to answer in a positive manner when questioned about culturally characterized behavior (Aschauer, 2009). The question of whether they are interested in the German language and literature could have triggered such positively biased behavior with regard to their answers. However, our findings are in line with previous ones, such that students with an immigration background tend to show a lower reading competence but also higher educational aspirations than students without an immigration background (Baumert & Schümer, 2001; Chudaske, 2012; Schleicher, 2006). Thus, apparently students with an

immigration background have a high motivational potential but are not able to transfer this to concrete actions (Stanat, et al., 2010). Perhaps teachers have more difficulty in identifying and promoting the motivations and interests of students with immigration backgrounds in particular (Stanat, et al., 2010). But, further investigation is needed to explain these findings. To do so it would be interesting to consider not only the immigration background by country of origin but also immigration background by students' commonly used language at home. Due to the fact that reading competences are strongly connected to students' language abilities, further studies should take both measures into account.

Finally, with regard to the third research question, our results indicated that the development of students' reading competence and their interest in language arts are mutually dependent upon each other, though both constructs seemed only weakly related. Whereas there was a general trend toward decreasing interest in language arts from Grade 5 to Grade 6, students who successfully improved their reading competence showed a slightly smaller decrease in their interest in language arts. Furthermore, students with a decreasing relative reading competence showed a more pronounced negative trend in their interest in language arts. This significant interaction between the development of students' interest in language arts and their relative reading competence indicates that even though students with a high reading competence will not necessarily develop an interest in the German language and literature, students with relatively low competencies in interest-related activities are likely to turn away from those domains. Accordingly, reading competence seems to be a necessary but not sufficient precondition for students' interest in language arts. Thus, although we could not find significant cross-lagged paths between students' interest in language arts and reading competence, our results indicate a significant relation between the changes in the two constructs, consequently highlighting the importance of taking interest-related competencies into account when researching interest development (Daniels, 2008; Deci & Ryan, 2002; Ryan & Deci, 2000).

Limitations of the Study

The first limitation of our study concerns the measurement of the amount of time students spent doing extracurricular reading. This variable was based on information

provided by the students' parents, who were asked to estimate how many hours per week their children spent doing extracurricular reading. One criticism of this measurement is that parents do not necessarily know how many hours their children spend reading per week, especially when the parents are working. Moreover, parents must differentiate between the number of hours their children read for fun and for school. Thus, the accuracy of these parental estimations remains unclear. Nevertheless, an additional analysis for which extracurricular reading behavior was self-reported by the students revealed comparable results.

Second, the presented results were not controlled for the influence of students' prior reading competence or their interest in language arts in Grade 4 because this information was not available for all students.

Third, we may criticize that only the first 2 years of secondary school were analyzed. Therefore, any additional development in the students' interest in language arts could not be pursued. Moreover, we still do not know whether or not the missing direct effect of students' interest in language arts on their reading competence would have been observed if the subsequent years of secondary school had been analyzed. Likewise, structural differences according to students' gender, immigration background, and the school track they attended might arise later when differences have become stronger and more consolidated.

Conclusion and Further Research Questions

In summary, we were able to show that although students' interest in the German language and literature did not directly affect their reading ability, there was an indirect relation that was mediated by the amount of extracurricular time the students spent reading, especially with regard to the reading of narrative texts. Moreover, this relation applied to students of both genders, students with and without immigration backgrounds, and students attending different types of schools. Finally, our results indicated a joint development of students' reading competence and interest in language arts and thus support the conclusion that these effects are reciprocal.

Even though the background variables that we considered did not influence the relation between students' interest in language arts and their reading competence, the impact of other moderating variables is still possible, and research on their effects

should be pursued. For example, with regard to students' reading motivation, the reading behavior of their parents has been found to significantly influence the development of this motivational construct (e.g., Baumert & Schümer, 2001; Baker & Scher, 2002). Thus, the influence of the attitude of students' parents toward the German language and literature should be additionally examined as a potential moderating variable.

Furthermore, future research should examine the relation between students' interest in language arts and their reading competence over a longer period of time. Beginning in primary school, these analyses could provide important information about whether students' interest in language arts and reading competence develop in a reciprocal manner or whether one construct primarily influences the other. Although our results suggest a joint development of students' interest in language arts and reading competence, more extensive data are needed to replicate and broaden our findings. Nevertheless, the presented results demonstrate that it is worthwhile to analyze an object-related interest and its specific impact on students' reading competence.

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