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Home Reading Support in Grades Four, Six, and Eight: Does Student Reading Motivation Matter?

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ABSTRACT

Numerous studies have investigated the relationship between the home literacy environment and reading motivation; however, their results are inconsistent. Limitations to previous studies include relying on parents' input concerning students' reading motivation, looking at only a few components of reading motivation, and focusing primarily on the characteristics of the home environment before children entered school. The aim of our research was to investigate how the active components of the home literacy environment in school-age children develop with age and to explore the relationship of these components with reading motivation. Our cross-sectional study included students in grades four, six, and eight and their parents ($N = 729$). We used a parent questionnaire to collect information on the home literacy environment, and a student questionnaire to collect data on reading motivation. In addition, the students completed a reading test. Our results showed a steady decline in the frequency of parents' reading support activities in higher grades and age differences in the range of factors that influenced the frequency of these activities. Performance goals predicted parental support to a small extent in grade four, and poor reading performance played a statistically significant yet minor role in grade six. In grade eight, parents shaped reading activities based on their own attitudes and habits. In general, weak correlations were found between parents' reading support activities and students' reading motivation in the studied grades.

Introduction

The role of the home literacy environment (HLE) in early literacy development is well established (e.g., Niklas & Schneider, 2013; Sénéchal & Young, 2008), and several studies have confirmed that HLE contributes to the development of reading competence in part through children's reading motivation (e.g., Mudrák et al., 2020; Niklas et al., 2020). In this context, many initiatives have aimed to strengthen the role of the home environment as a foundation for reading achievement before school age (e.g., Brown et al., 2018; Niklas & Schneider, 2017).

A supportive home environment can be particularly important during the transition from learning to read to reading to learn, as it is well known that this stage is challenging for many students (Chall, 1983; Meichenbaum & Biemiller, 1998; Oakhill et al., 2019). There is evidence that parental intervention can be effective in fostering positive attitudes toward reading in children who struggle to read at school (Baker, 2003; Choi et al., 2022). However, little is known about naturally occurring home literacy activities during these years, that is, how much and what kind of support parents provide at home for their school-age children, how it changes over the school years, and how it is tied to students' motivation to read (Klauda, 2009). The few studies that have focused on HLE and reading development have found that parents' involvement in their children's reading is still supportive during the school years (Baker, 2003; Georgiou et al., 2021; Xia et al., 2019) and that HLE is continuously changing partly as a function of the child's reading motivation (Boerma et al., 2018). However, these studies have mostly focused on the first couple of years of schooling, relied on parents' input concerning students' reading motivation as opposed to student self-reports, and investigated only a few components of reading motivation.

The aim of our cross-sectional study was to investigate the development of HLE and the relationship between HLE and reading motivation in grades four, six and eight, focusing on the transition from learning to read to reading to learn in order to gain a deeper understanding of the interaction between parental activities and reading motivation. In our study, relying on current models of reading motivation, we explored if students' self-reported multi-component reading motivation influences naturally occurring home literacy activities in the school years. In this work, reading is used as a broad term, as a process of decoding and comprehending texts in printed or digital format with multiple goals, such as reading for learning or reading for pleasure in a first language.

The home literacy environment

Conceptualization and components of the home literacy environment

HLE is an umbrella term that describes literacy-related interactions, resources, and attitudes that children experience at home (e.g., Bus et al., 1995; Leseman & De Jong, 1998; Scarborough & Dobrich, 1994). Previous studies have operationalized HLE in diverse ways, and the results have shown that the elements considered as components of HLE contribute to the development of reading ability in different degrees and ways (Inoue et al., 2020). In general, "active" models, which emphasize children's active participation in literacy-related activities, are better predictors of later literacy achievement than "passive" models, which relate children's literacy development to family members' observable behaviors at home, such as parents' reading habits (Bracken & Fischel, 2008; Burgess et al., 2002).

Sénéchal et al. (1998) further distinguished two types of literacy-related activities within the "active" approach. The first involves print-related activities, which are characterized by a code focus and the direct introduction of children to written texts (e.g., by teaching the letters of the alphabet). The second type entails meaning-related activities in which children encounter written texts indirectly and are mainly concerned with their meaning (e.g., reading stories). These two types of experiences are weakly correlated and predict different language- and reading-related outcomes (e.g., Ciping et al., 2015; Hamilton et al., 2016; Manolitsis et al., 2011; Sénéchal, 2006). Sénéchal and LeFevre (2002) argued that shared reading of storybooks (a meaning-focused activity) contributes to later reading comprehension through oral language development, whereas early teaching of reading and writing (a print-focused activity) affects first-grade word reading skills and predicts later reading comprehension performance.

Parents' own reading attitudes and beliefs, which may relate to reading itself, its importance and value (e.g., Baker & Scher, 2002; Sonnenschein et al., 2000), or to their child's reading

development (e.g., Weigel et al., 2006) and expectations (Martini & Sénéchal, 2012), are also commonly defined as additional elements of HLE.

Home literacy environment during school years

Most research on the link between HLE and reading development focuses on preschool years. These studies highlight the elements of HLE: shared reading, the availability of reading materials, parents' reading habits, and the frequency of reading stories as determining factors (Baker, 2003; Noble et al., 2019). However, an important question is whether these same factors are decisive in the reading development of older children, or whether students' reading outcomes are tied to completely various aspects of parental support (Klauda, 2009). According to Shapiro and Whitney (1997), reading with parents, although it occurs significantly less often in early adolescence, can motivate later ages as well. Recommending books and discussing readings also contribute to involvement in reading and increased performance, even in early adolescence (Baker, 2003; Xia et al., 2019).

However, "active" factors in HLE are not stable characteristics of the home environment. Indeed, parents dynamically shape the various forms of reading support they provide at home based on their children's perceived interest in reading (Boerma et al., 2018) and the development of their reading skills (Georgiou et al., 2021; Hemmerechts et al., 2017; Sénéchal & LeFevre, 2014). Therefore, it can be assumed that, in the case of upper elementary and middle school students, HLE may differ qualitatively and quantitatively from that of early childhood. In several measurement cycles of the Progress in International Reading Literacy Study (PIRLS) with fourth-grade students, information was collected from parents using separate scales to characterize HLE before school (early literacy activities) and during school (home-reading support), which is also reflected in the assumption that parental reading support during independent reading partly differs from the support provided earlier on (Mullis et al., 2004). In addition, it is assumed that as adolescence approaches, the influence of peers grows, and the importance of parental involvement drops (Klauda, 2009). Although studies on HLE have collected data from the parents of students of various ages, analyses are rarely reported by age or grade level.

Reading motivation

Learning motivation is commonly defined as the process of initiating, maintaining, and guiding learning behavior (e.g., Pintrich, 2003; Roseman, 2008; Skinner et al., 2009). Owing to the complex nature of learning motivation and related phenomena, motivation has been studied from many perspectives and within different theoretical paradigms (for reviews, see Cook & Artino, 2016; Schunk, 2000). However, there is broad agreement that learning motivation is multicomponential; that is, constructs tied to different theoretical approaches complement one another (Cook & Artino, 2016; Stutz et al., 2016; Watkins & Coffey, 2004; Wigfield & Guthrie, 1997).

Although there are many definitions of reading motivation, perhaps the most commonly cited one is from Guthrie and Wigfield (2000): "an individual's personal goals, values, and beliefs with regard to the topics, processes, and outcomes of reading" (p. 405). Like learning motivation, reading motivation is considered a multidimensional and multi-componential construct (e.g., Nolen, 2007; Stutz et al., 2016; Watkins & Coffey, 2004; Wigfield & Guthrie, 1997). However, strikingly, the widely used constructs of learning motivation and reading motivation do not entirely overlap (see Conradi et al., 2014; Schiefele et al., 2012). The need to address these differences is often raised in the literature, yet most empirical research does not address them (e.g., Conradi et al., 2014; Davis et al., 2018; Neugebauer & Fujimoto, 2020). Davis et al.'s (2018) review of the 16 most commonly used self-report reading motivation questionnaires reveals that the majority of them contain two to four scales, so it is not surprising that there is relatively little work that examines reading motivation as a truly multi-componential system based on current theories of learning motivation

(Conradi et al., 2014; Davis et al., 2018). At the root of the problem is the lack of a widely accepted reading-specific model of motivation (Ives et al., 2023); however, a few examples that draw on multiple theories of learning motivation that view reading motivation as a multi-componential system are Conradi et al. (2014), Schiefele and Schaffner (2016), and Wigfield and Guthrie (1997).

There are several categorisations of the components of reading motivation. In one of the most frequently used approaches, elements of reading motivation are categorized as intrinsic (e.g., interest) and extrinsic (e.g., grade) (Stutz et al., 2016; Unrau & Schlackman, 2006; Wigfield & Guthrie, 1997). Previous studies have shown the positive contribution of dimensions of intrinsic reading motivation and the relatively small or negative contribution of dimensions of extrinsic reading motivation to reading achievement (Aunola et al., 2002; OECD, 2010; Retelsdorf et al., 2011; Schiefele et al., 2012; Wigfield et al., 2016). Our study builds on Conradi et al.'s (2014) approach, which is based on a review of empirical work on reading motivation. It based the dimensions of reading motivation on constructs known from current theories of learning motivation and grouped them into three categories: goal orientations (mastery and performance), beliefs (about oneself and about reading) and dispositions (attitudes and interests). Although these factors are unlikely to cover the entire phenomenon of motivation, this conceptual delineation is based on sound theoretical foundations and allows for the simultaneous consideration of a number of motivational factors. In their meta-analysis of the relationship between reading motivation and reading achievement, Toste et al. (2020) conducted a series of relevant studies on this approach and confirmed that the model includes a significant number of constructs that are widely used in the study of reading motivation. According to results from previous studies, beliefs and dispositions are more closely linked to reading performance than goals (Toste et al., 2020).

The home literacy environment and reading motivation

A growing body of research supports the contention that HLE affects not only the development of reading competence but also children's reading motivation (e.g., Boerma et al., 2018; Yeo et al., 2014). Access to reading materials is also often tied to the enjoyment of reading, in addition to the development of reading ability (Bracken & Fischel, 2008; Frijters et al., 2000; Retelsdorf et al., 2011), as are parents' reading-related beliefs and habits (Altun et al., 2022; Baker & Scher, 2002; DeBaryshe, 1995). The results of research on the link between reading motivation and HLE constructs have been inconsistent. Numerous studies have reported weak ties (e.g., Hume et al., 2015; Wiescholek et al., 2018) or no connections (e.g., Carroll et al., 2019; Martini & Sénéchal, 2012; Ozturk et al., 2016), while examples of moderate-to-strong relationships can also be found (e.g., Boerma et al., 2018; Weigel et al., 2006; Yeo et al., 2014).

This inconsistency in results may be due to several factors. Although the multidimensional nature of reading motivation has been highlighted by a number of researchers (e.g., Stutz et al., 2016; Watkins & Coffey, 2004; Wigfield & Guthrie, 1997), a large body of relevant research is based on a narrow definition of reading motivation and only one of its aspects, either interest (e.g., Boerma et al., 2018; Carroll et al., 2019; Georgiou et al., 2021, Martini & Sénéchal, 2012), attitudes (e.g., Altun et al., 2022) or enjoyment (e.g., Retelsdorf et al., 2012; Wiescholek et al., 2018).

These inconsistent results may also be explained by differences in participants' perceptions. Regarding motivation, some studies favor parental reports (e.g., Hume et al., 2015; Saçkes et al., 2016), whereas others prefer children's self-reports (e.g., Altun et al., 2022). Baroody and Diamond (2013) found that parents' and children's perceptions of the children's interest in reading differed. This challenge may also be relevant for HLE. For example, differences in the perceptions of the classroom environment can be clearly detected from one participant to the next (Bardach et al., 2018; Urdan, 2004).

Another explanation is the age of the study sample. Most research on the effects of HLE has focused on early childhood and preschool years, although it can be assumed that early shared

parent-child reading experiences may also have an impact in later years. This effect on reading achievement has been confirmed in numerous studies (Arya et al., 2014; De Jong & Leseman, 2001; Notten & Becker, 2017; Sénéchal & LeFevre, 2002), but significantly fewer have focused on the effect of early HLE on later motivation. This limited body of work suggests that elements of early childhood HLE are linked to later reading motivation (Boulhrir, 2017; Duchein & Mealey, 1993). Research on the connection between reading motivation and HLE reflects little on age-related changes in HLE (Hill & Taylor, 2004; Izzo et al., 1999; Mullis et al., 2004) or the ongoing interaction between HLE and reading motivation (Boerma et al., 2018; Georgiou et al., 2021; Saçkes et al., 2016). Studies on the relationship between reading motivation and the home environment are also scarce in the upper elementary and middle school years (Klauda, 2009).

The context of the study

Our cross-sectional sample consisted of Hungarian students. In Hungary, learning to read begins with elementary education. This level comprises eight consecutive years of study, starting at the age of six. Reading instruction in schools is regulated by the National Core Curriculum, according to which the primary goal of reading instruction in the first four grades is to make reading a fundamental skill and enable students to comprehend the texts and instructions in schoolbooks using silent reading. Before school, Hungarian children may be exposed to print at home or in the years of compulsory kindergarten (Reynolds et al., 2022). In the first four grades, the form teacher is responsible for the main part of the curriculum. From grade five onwards, subjects are taught by separate subject teachers, and the focus shifts from learning to read to reading to learn. Although the development of reading literacy is a curricular expectation in grades five to eight, teachers are not prepared for this task and do not emphasize it (Tóth, 2015).

PIRLS studies reported varying trends in the average performance of Hungarian students, but they generally outperform the average reader from the participating countries (Csapó et al., 2019). The latest survey shows that Hungarian fourth graders are among the leaders in reading performance. Parents' responses indicate that Hungarian students start school less prepared than the international average for reading, but the impact of this relative disadvantage is much weaker in grade four in Hungary than in other countries (Mullis et al., 2017). In contrast, on the PISA (Programme for International Student Assessment) reading comprehension tests, Hungarian 15-year-olds consistently performed below the average of participating countries in all but one assessment, and the distribution of achievement was also unfavorable, with a high proportion of low-achieving students (Csapó et al., 2019; Hódi et al., 2017; OECD, 2019).

The role of family background in the development of reading achievement is particularly important in Hungary. According to the PIRLS study, the relationship between home resources and achievement in Hungary is well above the international average (Mullis et al., 2017). In the PISA study, the Economic, Social, and Cultural Status Index, developed to measure socioeconomic status, reported a significantly higher than average variance in reading comprehension performance (OECD, 2019).

The PIRLS 2016 showed that the reading attitudes and self-concept of Hungarian fourth graders are consistent with the international average. In line with the international average, students were appropriately distributed on the self-concept scale: 48% were very confident, 33% were confident, and 19% were not confident in reading tasks (Mullis et al., 2017).

Aims and research questions

Our research aims to investigate how the active components of HLE (which we refer to as home-reading support (HRS)) in school-age children develop with age and to explore the link between

HRS and reading motivation, with a particular focus on differences by grade level. This study is novel in several ways.

Previous work has mainly investigated HLE, its active and passive dimensions, and their relationship with reading motivation before and at the beginning of school. Our research focuses on active activities to support reading among school-aged children, but we also collected data on active and passive HLE before school, as well as on parents' reading habits and attitudes toward reading to investigate how these are tied to HRS in the school years. A particularly critical issue in relation to student support is what characterizes HRS as students move from learning to read to reading to learn and to what extent this is tied to reading motivation (Boerma et al., 2018; Klauda, 2009). To address these gaps, we conducted research on middle childhood and early adolescence years, covering the typical age phase of instruction shift from learning to read to reading to learn (Chall, 1983).

The results of previous studies on the relationship between HLE and reading motivation are inconsistent in terms of the strength of the relationship, which may be partly due to differences in the constructs used to measure reading motivation and their narrow scope. One of the strengths of our study is that it covered a wide range of reading motivation variables. The Reading Motivation Questionnaire – Hungarian (RMQH), was created to measure reading motivation based on previous scales; its constructs were selected considering both general theories of learning motivation and the literature on reading motivation. Based on Conradi et al.'s (2014) model, we drew on three sets of reading motivation constructs: goal orientations (acquisition and achievement), beliefs (reading self-concept and value of reading) and dispositions (attitudes toward reading at school and in leisure time). We complemented the model with social motives for reading, the role of which has been demonstrated in several previous studies (for a review, see Pelletier et al., 2022).

Another notable novelty of our study is that we combined students' and parents' perspectives in the data collection. We used a student questionnaire for reading motivation and a parent questionnaire for HLE. To gain a deeper understanding of the link between HRS and reading motivation, we also examined other elements of HLE as benchmarks as well as students' reading achievement. The following research questions guided this study.

1. To what extent is HRS related to reading motivation, reading achievement, and some components of HLE?
2. What are the differences in HRS in grades four, six, and eight?
3. How can HRS be predicted by reading motivation, reading achievement, and some components of HLE; and what differences can be identified by grade level?

Materials and methods

Participants

Our study included fourth-, sixth-, and eighth-grade students and their parents ($N = 729$). The characteristics of the samples are listed in Table 1. The sample was heterogeneous in terms of the mothers' educational level, and the distribution by grade was not significantly different from that of the full sample ($\chi^2(5)_{\text{Grade 4}} = 1.27$, $p = .94$; $\chi^2(5)_{\text{Grade 6}} = 3.15$, $p = .68$; $\chi^2(5)_{\text{Grade 8}} = 1.63$, $p = .90$). The first language of all participants was Hungarian.

Instruments

Information on HLE and demographic variables were collected using a parental questionnaire. The gender and age of the students, as well as the parents' highest educational level were

Table 1. Main characteristics of the sample.

Variable	n	%
Grade		
4	211	29
6	266	36
8	252	35
Mother's educational level		
Elementary school	116	16
Vocational school	205	28
Upper secondary vocational school	178	24
Upper secondary grammar school	68	9
Bachelor's degree	97	13
Master's or higher	31	4
Missing	34	5
Gender		
Male	365	50
Female	364	50

collected as demographic information. Reading motivation data were collected using a self-report student questionnaire. In addition, students took a reading test.

The home learning environment

HLE was measured using scales from the Hungarian version of the 2006 PIRLS Learning to Read Survey (Martin et al., 2007), in which respondents provided information about reading-related activities and circumstances at home for each child. This questionnaire covers preschool activities and parental support during the school years, as well as the active and passive components of HLE. The active components were represented by questions on the frequency of literacy- and reading-related activities, while the passive components were covered by questions on parents' reading habits and attitudes. The questionnaire also included statements on print- and meaning-related dimensions of preschool activities.

The home reading support scale contained six statements about how parents support reading during the school years (e.g., "I listen to my child read aloud"). The meaning-related early home literacy activities scale summarizes parents' responses to six parent-child activities (e.g., "I talk to my child about things we've read") in the early years. The print-related early home literacy activities scale summarizes parents' responses to four parent-child activities in the early years (e.g., "We read aloud signs and labels"). The parents' attitude toward reading scale is based on parents' agreement with five statements (e.g., "I read only if I have to"). Parents' reading habits were measured using one question ("When you're at home, how often do you read for your own enjoyment?"). All items of the instrument are listed by scales in Appendix Table A1.

Each item was rated on a five-point Likert scale ranging from 1 (never or almost never) to 5 (every day or almost every day). Responses to negative statements were reverse coded, and the mean scores for all items were calculated so that higher scores reflected a favorable HLE. The structural validity of the four HLE scales was assessed using confirmatory factor analysis with maximum likelihood estimation using Mplus software (version 7.0) (Muthén & Muthén, 1998–2003). A maximum likelihood estimator with complete information was used to address the missing data (ranging from 0 to 0.5% for all variables at the item level). The fit for the hypothesized model to the actual data was characterized by the χ^2 test, the comparative fit index (CFI), the Tucker–Lewis fit index (TLI) and the root mean square error of approximation (RMSEA). The criterion for model fit was defined according to Hu and Bentler (1999) (RMSEA ≤ 0.06; CFI ≥ 0.95; TLI ≥ 0.95). The structural validity of the scales was satisfactory: $\chi^2(203) = 1020.82$, $p < .001$, RMSEA $= 0.064$, CFI $= 0.95$, TLI $= 0.93$. The internal consistency of the scales was

Table 2. Cronbach's alpha for the study variables by grade and in total.

Variable	Grade 4	Grade 6	Grade 8	Total
Home reading support	0.80	0.78	0.82	0.82
Meaning-related early home literacy activities	0.71	0.70	0.79	0.74
Print-related early home literacy activities	0.78	0.75	0.80	0.78
Parents' attitude toward reading	0.78	0.81	0.81	0.80
Reading self-concept	0.80	0.79	0.82	0.80
Social motives	0.80	0.83	0.82	0.82
Leisure attitude	0.75	0.64	0.68	0.69
School attitude	0.74	0.82	0.81	0.80
Value of reading	0.60	0.60	0.64	0.61
Mastery goals	0.72	0.80	0.77	0.79
Performance goals	0.77	0.88	0.86	0.87
Reading test	0.80	0.80	0.72	0.79

measured using Cronbach's α values, which are presented for the full sample and grades in Table 2. The reliability of the scale according to grade was satisfactory.

Reading Motivation Questionnaire – Hungarian

The questionnaire was based on a model developed by Conradi et al. (2014) and adapted from scales available in the literature. Task-specific items were used to assess reading-goal orientation. These items were related to the reading comprehension test, which was part of the research. The other scales focus on reading in general. In line with the PISA definition of reading literacy (OECD, 2019), students were asked to think about reading in broad terms at the beginning of the questionnaire: "Think of reading as any activity that requires the understanding of written texts. So, for example, you are reading when you are deep into the history textbook, browsing the Internet freely, or checking what's on in the cinema." The scales for mastery and performance goals were borrowed from Meece and Miller (2001) and had five items each (e.g., "I really wanted to understand this assignment," "I wanted to do better than other students"). Reading self-concept was measured using the corresponding scale of the Self-Description Questionnaire-I developed by Marsh (1990) with seven items, (e.g., "I'm good at reading"). The Value of reading was based on Schoor's (2016) utility value scale with seven items, (e.g., "Reading helps to solve everyday problems"). Considering that the development of students' reading ability at this age already allows for reading for experience and reading for knowledge, the questionnaire distinguishes attitudes toward reading at school, (e.g., "How do you feel about reading your schoolbooks?"), and attitudes toward reading for pleasure (e.g., "How do you feel when you read a book on a rainy Sunday?") with five items each, following McKenna and Kear (1990). To explore social motives for reading, seven items from the relevant scales of the Motivation for Reading Questionnaire (MRQ-R) by Wigfield and Guthrie (1997) were used (e.g., "I talk to my friends about what I'm reading"). All items of the instrument are listed by scales in Appendix Table A2.

The RMQH contained statements and questions on the seven components of reading motivation, with each item rated on a five-point Likert scale ranging from 1 (false) to 5 (true). Responses to negative statements were reverse-coded, and the average scores for all items were calculated so that higher scores reflected a higher level of reading motivation. Examining the structural validity of the seven reading motivation scales was conducted using the same procedure as with the HLE scales (missing data ranged between 0 and 0.6% at the item level). The structural validity of the scales was satisfactory: $\chi^2(917) = 2424.79$, $p < .001$, RMSEA = 0.047, CFI = 0.92, TLI = 0.91. The internal consistency of the scales was calculated using Cronbach's α, which is shown for the entire sample and grades in Table 2. The value of the reading scale had the lowest Cronbach's α but reached a generally accepted value of 0.6 for all grades.

Reading achievement test

Reading achievement was assessed using a reading comprehension test (Molnár & Józsa, 2006) that is frequently used in Hungarian reading studies. To ensure construct validity, the test was developed by reading teachers and reading researchers, who are also experienced test writers, and test development relied on the PISA 2003 Assessment framework (OECD, 2003). Thus, the aim of the test was to cover different text formats (continuous and non-continuous texts), reading processes (retrieving, interpreting, and reflecting on/evaluating information), and item types (closed and open constructed response items) in reading situations. The test consisted of one continuous text and one non-continuous text. In the first task, students answered open-ended questions based on a train timetable. The second task contained similar questions about the narrative text. The tasks on the 24-item test required students to perform reading activities of varying complexities, from simple information retrieval to reflection on the main idea. The tests were corrected and rated by one of the researchers and a teacher with the help of the test manual. Coders' agreement reached above 85%; disagreements were resolved via discussions. The internal consistency of the test was acceptable on each grade level (Table 2).

Data collection

The parent questionnaire was completed by parents or caregivers at home and collected by the form teachers. Parents were free to decide whether to complete the questionnaire.

The student questionnaires and reading comprehension tests were completed during regular class hours. Teachers were provided with explanatory notes on how the students should complete the questionnaires. Teachers were required to inform the students of the general aims of the research, and ask them to provide honest answers. Teachers were asked to read out loud to students the introduction part of the questionnaire which explained that they participated in a research project which aimed to gain information on what students thought about reading. The teachers also informed students that their participation in the study would be voluntary and anonymous. Teachers were asked to collect and forward the questionnaires and the tests without looking into them, which was emphasized for students as well.

Prior to data collection, written informed consent was obtained from parents. This study was approved by the Ethics Committee of the Doctoral School of Education at the University of Szeged, Hungary.

Data analysis

Data analysis was conducted in three phases. First, the relationship of HRS to the other HLE components–reading motivation and reading achievement–was analyzed by calculating Pearson's correlation, and the differences between the coefficients were determined using Fisher's z-test. Second, differences in HRS by grade were determined using a one-way analysis of variance (ANOVA), and the results of the homogeneity of variance tests with the corresponding post hoc analyses were ascertained using questionnaire items and scale levels. Finally, the relationships between variables by grade were examined using regression analysis. Based on the literature, HRS is shaped by parents based on their children's motivation and reading achievement; therefore, HRS was treated as a dependent variable. Motivation scales with significant correlations to HRS, reading achievement, and other HLE items were considered independent variables. Analyses were conducted using IBM SPSS version 25.

Results

As Table 3 shows, there were significant correlations between HRS and each of the additional HLE indices. There were medium correlations between HRS and two early home literacy activity

Table 3. Descriptive statistics and correlations for study variables.

Variable	n	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. HRS	714	3.39	0.83	—											
2. MEHLA	705	3.83	0.82	0.32**	—										
3. PEHLA	688	3.06	0.84	0.40**	0.47**	—									
4. PATR	699	3.75	0.83	0.21**	0.33**	0.13**	—								
5. PRH	726	3.56	1.26	0.12**	0.32**	0.11**	0.54**	—							
6. RSC	699	3.78	0.72	0.00	0.12**	0.02	0.06	0.09*	—						
7. SM	699	2.79	0.93	0.13**	0.10**	0.14**	0.06	0.08*	0.41**	—					
8. LA	712	3.36	0.87	0.04	0.12**	0.13**	0.09*	0.09*	0.49**	0.64**	—				
9. SA	715	3.38	0.96	0.18**	0.05	0.09*	−0.03	−0.02	0.38**	0.52**	0.47**	—			
10. VR	700	3.94	0.68	0.02	0.04	0.01	0.09*	0.09**	0.33**	0.22**	0.29**	0.28**	—		
11. MG	686	3.89	0.91	0.15**	0.07	0.11**	−0.01	−0.01	0.27**	0.39**	0.31**	0.47**	0.28**	—	
12. PG	698	3.27	1.25	0.23**	0.03	0.05	0.01	−0.04	0.08*	0.23**	0.13**	0.30**	0.15**	0.57**	—
13. RT	728	57.03	18.55	−0.20**	0.18**	−0.02	0.13**	0.18**	0.38**	0.14**	0.25**	0.04	0.20**	0.05	−0.17**

Note. HRS: home reading support; MEHLA: meaning-related early home literacy activities; PEHLA: print-related early home literacy activities; PATR: parents' attitude toward reading; PRH: parents' reading habits; RSC: reading self-concept; SM: social motives; LA: leisure attitude; SA: school attitude; VR: value of reading; MG: mastery goals; PG: performance goals. In the case of these subscales, the values range between 1 and 5. RT: reading test. The values range between 0 and 100 for the reading test.
*p<.05; **p<.01.

Table 4. Means, standard deviations and ANOVA for home reading support at the item and scale levels.

Items	Grade 4		Grade 6		Grade 8		F	df	η^2	Grade differences[a]
	M	SD	M	SD	M	SD				
I listen to my child read aloud.	4.32	0.78	3.67	1.12	3.06	1.22	79.29**	725	.18	{4} > {6} > {8}
I talk to my child about things we've read.	4.09	0.79	3.53	1.14	3.11	1.16	48.99**	724	.12	{4} > {6} > {8}
I talk to my child about what he/ she is reading on his/her own.	3.87	0.91	3.60	1.05	3.34	1.14	14.38**	723	.04	{4} > {6} > {8}
I discuss my child's classroom reading work with him/her.	4.13	0.98	3.91	1.04	3.54	1.20	17.82**	725	.05	{4} > {6} > {8}
I help my child with reading for school.	4.14	1.04	3.51	1.24	2.82	1.30	68.56**	726	.16	{4} > {6} > {8}
I go to the library or a bookshop with my child.	2.33	1.02	2.25	1.01	2.20	1.00	0.93*	723	.00	n.s.
Home reading support	3.81	0.65	3.41	0.77	3.00	0.85	62.97**	713	.15	{4} > {6} > {8}

*$p>.05$; **$p<.001$.
[a]n.s.: not significant. >Indicates the direction of the significant difference ($p<.05$) obtained during the ANOVA post-analyses. Based on results from the tests for homogeneity of variances, Dunnett's T3 tests were used in all cases.

subscales, with higher coefficients for print-related activities and significantly lower coefficients for meaning-related activities ($z=1.62$, $p = .05$). These correlations were higher for passive HLE components, as indicated by the significant difference between the correlation coefficients for meaning-related early home literacy activities and parents' attitudes toward reading scales ($z=2.24$, $p = .01$). There was also a significant difference between the correlation coefficients of the two passive HLE subscales ($z=1.73$, $p = .04$). In terms of the relationships between HRS and motivation subscales, there was a non-significant correlation for reading self-concept, leisure attitude, and value of reading scales and a weak positive significant relationship for the social motives, school attitude, and mastery and performance goals scales ($r=0.13$ to 0.23, $p < .01$). A weak and significantly negative relationship was found between performance on the reading comprehension test and HRS ($r = -0.20$, $p < .01$).

There was a significant difference in HRS among the three grades (Table 4). Because the variances were not homogeneous (Levene's test $= 10.28$, $p < .001$), Dunnett's T3 test was used to determine differences. This indicated that the mean HLE index in grade four was significantly higher than that in grade six, and lowest in grade eight. Examining the differences in the HRS scale at the item level, with the exception of library/bookshop visits, the variances and means for the other five items were significantly different among the three grades. A *post-hoc* ANOVA was conducted using Dunnett's T3 test to examine differences between grades. The effect of grade level was more significant for listening to one's child reading aloud and parental assistance on school reading tasks, while the difference was smaller for the three items for reading alone or together or discussing school reading. For these items, the means were highest and the standard deviations were lowest in grade four, the means were lower and the sample was more heterogeneous in grade six, and the means were the lowest and the standard deviations were higher in grade eight.

Multiple regression analysis was conducted to determine the effects of factors that influenced the development of HRS. Our analysis included variables that were significantly correlated with HRS (Table 1). Table 5 presents the results of the multiple regression analysis calculated for HRS by grade. The same set of independent variables was used in all three analyses so that the effects of the variables included in the analysis could be compared directly. All three regression models significantly predicted HRS, with the variance explained by the independent variables ranging from 22 to 29%. Among the HLS indices, print-related early home literacy activities had a significant explanatory effect in all three grades: 14% in grades four and eight and 18% in grade six. Meaning-related early home literacy activities explained 6% of the variance in HRS in grade four and 7% of the variance in grade six, while they had no significant effect on grade eight. Of the two passive HLE scales, parents' attitudes toward reading explained 8% of the variance in HRS scores in grade eight. Motivational factors typically had no effect, with only one case (grade four)

Table 5. Multiple regression analyses by grade as predictor of HRS.

	β (SE$_β$)	β	t	p	r	F	df	p	adj. R^2
Grade 4									
Overall model						5.53	169	<.001	0.23
Meaning-related early home literacy activities	0.16 (0.08)	0.17	1.93	.05	0.34**				
Print-related early home literacy activities	0.29 (0.07)	0.34	4.10	<.001	0.43**				
Parents' attitude toward reading	0.06 (0.07)	0.07	0.86	.39	0.17*				
Parents' reading habits	−0.03 (0.05)	−0.06	−0.64	.52	0.09				
Social motives	0.02 (0.07)	0.02	0.28	.78	0.17*				
School attitude	0.04 (0.07)	0.05	0.53	.60	0.10				
Mastery goals	−0.07 (0.09)	−0.08	−0.85	.40	0.12				
Performance goals	0.13 (0.07)	0.17	1.94	.05	0.17*				
Reading test	0.00 (0.00)	−0.02	−0.24	.81	0.01				
Grade 6									
Overall model						9.56	193	<.001	0.29
Meaning-related early home literacy activities	0.20 (0.08)	0.20	2.68	.01	0.36**				
Print-related early home literacy activities	0.35 (0.06)	0.37	5.40	<.001	0.49**				
Parents' attitude toward reading	0.08 (0.06)	0.09	1.34	.18	0.18*				
Parents' reading habits	−0.03 (0.04)	−0.04	−0.60	.55	0.02				
Social motives	0.05 (0.06)	0.06	0.76	.45	0.10				
School attitude	0.05 (0.06)	0.06	0.80	.43	0.13*				
Mastery goals	0.00 (0.06)	0.00	−0.03	.97	0.13*				
Performance goals	−0.03 (0.04)	−0.05	−0.64	.53	0.08				
Reading test	−0.01 (0.00)	−0.21	−3.08	<.01	−0.21**				
Grade 8									
Overall model						6.89	187	<.001	0.22
Meaning-related early home literacy activities	0.07 (0.07)	0.07	0.94	.35	0.31**				
Print-related early home literacy activities	0.33 (0.07)	0.34	4.50	<.001	0.40**				
Parents' attitude toward reading	0.24 (0.08)	0.25	3.00	<.001	0.31**				
Parents' reading habits	0.03 (0.05)	0.04	0.53	.60	0.24**				
Social motives	−0.04 (0.07)	−0.04	−0.58	.56	0.04				
School attitude	0.04 (0.07)	0.04	0.60	.55	0.05				
Mastery goals	0.00 (0.08)	0.00	0.01	.99	0.03				
Performance goals	0.02 (0.05)	0.03	0.45	.65	0.02				
Reading test	−0.01 (0.00)	−0.12	−1.77	.08	−0.09				

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

explaining 3% of the variance in performance goals. Text comprehension performance contributes to shaping HRS in grade six, with a negative effect ($\beta = -0.21$) explaining 4% of the variance in HRS.

Discussion

A large body of research has been conducted on the relationship between HLE and reading motivation in preschools. However, our knowledge of this relationship is limited to preschoolers, and we have little knowledge of age differences. We used parental questionnaires to collect data on the HLE of fourth-, sixth-, and eighth-grade students. The focus of our study was the HRS, an active component of school-age HLE. We were interested in how much support parents provided for reading in different grades and how this relates to their children's reading motivation. We considered reading motivation to be a multidimensional construct based on the current literature (Conradi et al., 2014; Guthrie & Wigfield, 2000; Toste et al., 2020) and investigated it using a student questionnaire with scales that capture this multidimensionality. In addition, students took a reading test.

Our first research question concerned the relationship between HRS and other components of HLE, reading motivation scales, and reading achievement. Previous studies have shown that some elements of HLE are interrelated; however, we typically have knowledge of preschool age or early elementary stages (e.g., Sénéchal, 2006; Sénéchal & LeFevre, 2002). Our results showed significant

relationships between the HRS and the elements of HLE. Parents who frequently engaged in various literacy-related activities with their children before school were more likely to support their children in reading during school. The link between the frequency of print-related early home literacy activities and that of preschool support activities was stronger than that between meaning-related activities and preschool support, presumably because of the similarity in the nature of these activities. Consistent with previous findings (e.g., Altun et al., 2022; Baker & Scher, 2002), parents who are frequent readers and those who like reading are more likely to engage in literacy support activities with school-aged children.

In previous studies, the strength of the relationship between HLE and specific constructs of reading motivation was wide (e.g., Martini & Sénéchal, 2012; Weigel et al., 2006; Wiescholek et al., 2018). As a possible explanation, it has been suggested that the strength of this link depends on which reading motivation construct is used in the study. Our results suggested no relationship or a weak relationship across the scales. Among the factors examined, attitudes toward reading at school, mastery and performance goals, and social motives had weak but significant ties to HRS. All relationships were positive but extremely weak, with the highest correlation between HRS and performance goals ($r = 0.23$, $p < .01$). No correlations were found between the HRS and students' reading self-concept, attitudes toward leisure reading, and reading value.

Some studies have found an explicitly strong relationship between HLE and one or another reading motivation construct (e.g., Boerma et al., 2018; Weigel et al., 2006; Yeo et al., 2014). Several explanations have been offered for the differences between these studies and the results of the present study. First, previous research used HLE and various reading motivation constructs. In addition, typically, only one construct has been used at a time in relation to reading motivation, perhaps the most common being interest (e.g., Boerma et al., 2018; Carroll et al., 2019; Georgiou et al., 2021, Martini & Sénéchal, 2012), attitude (e.g., Altun et al., 2022) and enjoyment of reading (e.g., Retelsdorf et al., 2012; Wiescholek et al., 2018). The divergent importance of the reading motivation constructs was confirmed by the results of this study. Second, unlike previous work, our study relied on parents' perceptions of HLE and students' perceptions of reading motivation, possibly also influencing the strength of the relationship. Third, the different ages of the students may also play a role in the differences in the strengths of these links. For example, the role of the school environment and school experiences in influencing motivation is thought to increase with age (see Klauda, 2009). In addition, Klauda (2009) suggests that parental involvement in reading may lead to a drop in motivation among adolescents. This hypothesis is consistent with findings on the promotion of autonomy in the context of self-determination theory (e.g., De Naeghel et al., 2014) and points to further scope for simultaneously investigating student and parent perceptions in understanding the role of HRS in reading motivation.

The relation between performance on reading comprehension tests and HRS is weak and negative. This may suggest that parental support is more common among students with poor reading performance (Georgiou et al., 2021; Hemmerechts et al., 2017; Sénéchal & LeFevre, 2014).

Our second research question investigated whether the frequency of HRS-related activities varies by grade. Our results show that parental involvement is highest in grade four, and then, with the exception of visits to the library or bookshop, parental reading support activities occur less frequently in higher grades. For all statements except this activity, there were significant differences in the frequency of the activities for all three grades. Boerma et al. (2018) examined the frequency of parental reading support activities at home between grades three and six and also found a decreasing trend. Our work confirms this and extends it by age by showing that the frequency of HRS activities continues to decline after sixth grade.

Our third research question was concerned with the prediction of HRS by other HLE components–reading motivation and reading achievement–and whether this varies by grade. Our results suggest that parents' previous reading support activities are determinants of the HRS in schools across all three grades. Presumably, parents who regularly supported their children's reading

before school also tended to tailor active HLE components during school to support their child's reading development. Passive HLE components, that is, parents' own reading habits and attitudes, were assumed to provide a model for the students. Surprisingly, however, they were much more explanatory of the frequency of reading support activities at home in eighth grade than in the previous two grades. Thus, it appears that parents with more favorable reading attitudes and habits in grade eight are more likely to engage in more frequent reading support activities. The final year of primary school in the Hungarian school system (i.e., eighth grade) is when students generally decide which secondary school they will attend, which may reflect the fact that more educated parents pay more attention to their children's education, including school-related reading activities.

Previous findings have shown that in addition to parents' reading attitudes and habits, children's attitudes and interest toward reading also play a role in shaping the frequency of parental support (Georgiou et al., 2021) and that children's motivation may even override parents' attitudes. Boerma et al. (2018) concluded that parents can set aside their negative feelings about reading if they perceive their children as interested in it. Given that the results of studies comparing the strength of motivation between parents' reports and students' self-reports point to a possible significant difference between the two perceptions (Baroody & Diamond, 2013), we investigated whether students' self-reported motivation was also a predictor of HRS. Our findings suggest that the motivational factors examined were not significant determinants of HRS. The only motivational factor that contributed slightly but significantly to the variance in HRS (3%) was performance goals in grade four, that is, students' desire for recognition and better grades. The fact that students' own perceptions of their reading motivation do not play a significant role in the prevalence of HRS does not contradict research that points to parents being able to shape their children's HRS over the years based on their perceptions of their children's motivation. However, this does not support the hypothesis that learners are better able to express their preferences later in life (Boerma et al., 2018). Among the variables, reading achievement was negatively related to HRS in grade six, confirming previous limited findings that indicate that parents of students who read less well are more engaged with their children (e.g., Hemmerechts et al., 2017). Reading achievement explained 4% of the variance in the frequency of parental involvement in this grade but had no explanatory power in the other grades. This suggests that many parents perceive the transition from learning to read to reading to learn as challenging for students.

Implications for educational practice

Our results have implications for educational practice, mainly related to how teachers can support parents in order to establish learning environments which motivate students to read. Findings suggest that parental reading support in the examined grades is not sensitive to students' self-reported attitudes, mastery goals, or values related to reading. As dimensions of intrinsic reading motivation contribute to reading competence (Schiefele et al., 2012; Wigfield et al., 2016), teachers should encourage and guide parents to be more sensitive to the components of intrinsic reading motivation of their children, and provide them with ample opportunities to develop intrinsic orientation toward reading. There is evidence that focusing on students' psychological needs—autonomy, relatedness and competence—by providing choices, sharing readings, or offering opportunities for independent reading can contribute to gains in reading motivation in a classroom context (Pelletier et al., 2022). This might be a practice that could be adopted by parents with the help of educators.

Results suggest that teachers should help students express their preferences in reading. Previous results show that parents' perceptions of reading motivation contribute to the HLE (Boerma et al., 2018), but our study suggests that students' self-perceived reading motivation does

not. Being able to communicate one's beliefs and preferences about reading practices and materials might help parents shape the HLE in a way that better meets the needs of students.

Findings of this study clearly show that parental support for reading decreases with students' grade level. This might be due to perceived skill acquisition or a desire to increase the autonomy of the child (Merga, 2014). However, withdrawing parental encouragement and support too early might not be beneficial for students. Educators should help parents recognize that reading development is a long-term process in which readers continuously enhance their skills to be prepared for new challenges (Cervetti et al., 2020). As reading materials at and out of school become increasingly demanding, students need to develop a set of skills that allow them to comprehend and engage with written information presented in one or more texts, in various forms, and for a set of purposes (OECD, 2019). Thus, supporting the parental view that acquisition of reading continues throughout schooling might contribute to the forming of favorable HLE

Our results suggest that parents are more likely to get involved in their children's reading if they perceive that their children read on a lower level, or when they would like to help their children get better grades. These results draw attention to the fact that teachers' feedback on students' reading performance and the relationship between grades and performance may stimulate parents' reading support activities.

Limitations and future directions

The results presented in this study must be considered in light of several limitations. The first was the use of cross-sectional data. A longitudinal design that addresses reciprocal effects would add valuable information to our understanding of how HRS and reading motivation influence each other over time.

HRS was assessed using an instrument developed for parents of fourth-grade students (Martin et al., 2007). One limitation in this context is that the forms of HRS may differ according to the students' age (Klauda, 2009). In other words, the measurement instrument used may impose *a priori* limitations on the information that can be collected. There may be many other forms of parental support that influence children's reading motivation and achievement; however, one particular questionnaire cannot capture them (e.g., Chen & Hu, 2021). Thus, it seems necessary to develop a measurement instrument that captures a broader age range and a wider array of forms of parental support to understand HRS, thus providing a basis for investigating age-related differences in HRS. Our results show that HRS is mainly tied to motivational constructs that are more closely linked to school reading, suggesting that the focus of parental support during school is primarily school-related reading. Of the six support activities covered by the HRS scale, two were explicitly connected to students' reading at school, and one visit to the library/bookshop was clearly not tied to school reading. The remaining three items did not specify whether they involved school or leisure reading. In the future, it would be useful to use a measure of parents' reading support activities in both in- and out-of-school contexts to obtain a more accurate picture of the characteristics of HRS in schools. Another question related to measuring HLE is the accuracy of parents' recollections of preschool home environments and common activities after several years have passed.

We relied on parents and children to collect our data, which has both advantages and disadvantages. In terms of limitations, it is worth noting that the perceptions of each respondent regarding HLE and motivation may differ, which may have influenced the relationships between the variables under examination. However, little information is available on this topic, and future research should explore the differences in participants' perceptions.

Our research involved native Hungarian-speaking students, so the generalizability of the results may be limited. At the same time, our findings confirm the relationship found in other studies in other languages; namely that early adolescent reading achievement and certain motivational

characteristics of learners are related to parental support for reading (Baker, 2003; Georgiou et al., 2021; Xia et al., 2019). However, the findings of this work are worth exploring in more languages, too.

Finally, the reading comprehension assessment was based on only two texts. Learners' performance can be significantly influenced by text characteristics (McNamara et al., 1996, 2011). It is conceivable that the relationship among HRS, reading motivation, and reading performance may differ for different texts. Future research should involve multiple texts to explore the interactions between HLE, reading motivation, and reading competence.

Conclusion

Despite the limitations of our study, our results provide further evidence for the links between reading motivation, reading competence and parental support for reading, and add fundamental new information by suggesting a bidirectional relationship among the variables. Although there is a plethora of studies on how parental support and the home literacy environment contributes to motivational and competence outcomes in reading (Altun et al., 2022; Dong et al., 2020, Mudrák et al., 2020; Sénéchal, 2006), research on the role of motivational variables in shaping the home environment is scarce, especially in the higher grades. As the handful of studies examining the role of reading motivation in parental support in reading seems to suggest that home reading support is dependent on children's reading motivation and competence as perceived by parents (Boerma et al., 2018; Saçkes et al., 2016), this study examined the role of reading motivation based on students' self-reports, and found that self-reported motivation is a less significant determinant of HRS.

As previous research relied on different motivational constructs to capture reading motivation, such as interest (e.g., Boerma et al., 2018; Carroll et al., 2019; Georgiou et al., 2021, Martini & Sénéchal, 2012), attitudes (e.g., Altun et al., 2022), or enjoyment (e.g., Retelsdorf et al., 2012; Wiescholek et al., 2018), our study extended previous findings by demonstrating that the relationship between reading motivation and the HLE varies depending on the motivational construct under consideration. The Reading Motivation Questionnaire utilized by this study was based on Conradi et al.'s (2014) model of reading motivation, covering a number of reading motivation constructs identified by previous research. From among the examined motivational variables only performance goals proved to be contributors of HRS, while students' attitudes toward leisure or school-related reading, the value they attribute to reading, or their mastery goals were unrelated or showed no exploratory strength.

Finally, while the majority of research on HLE and reading motivation focused on the preschool and early years of schooling (Klauda, 2009), our findings provide insights into the interaction between HRS, reading motivation, and reading achievement in grades four, six, and eight. Our results show that the frequency of parents' reading support activities during these grades steadily drops, and that the range of factors that influence their frequency varies by age. Previous work suggests that student characteristics may also influence parents' reading support activities in schools (e.g., Boerma et al., 2018; Georgiou et al., 2021; Hemmerechts et al., 2017; Sénéchal & LeFevre, 2014). Our findings indicate that the goal of achieving good performance is a small predictor of parental support in grade four, and that poor reading performance is a small predictor in grade six. In eighth grade, parents were most likely to shape these activities based on their own attitudes and habits. Results of this study demonstrate that parents of sixth-grade students are particularly receptive to providing support for their children if they read poorly, which should be considered when planning interventions.

Disclosure statement

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Data availability statement

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

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Appendix A

Table A1. Scales of the PIRLS 2006 learning to read survey.

Constructs and items

Home reading support
I listen to my child read aloud.
I talk to my child about things we've read.
I talk to my child about what he/she is reading on his/her own.
I discuss my child's classroom reading work with him/her.
I go to the library or a bookshop with my child.
Print-related early home literacy activities
We played with alphabet toys
We played word games
We wrote letters or words
We read aloud signs and labels
Meaning related early home literacy activities
We read books
We told stories
We sang songs
We talked about things we have read
We talked about things I have read
We visited a library
Parents' attitude toward reading
I read only if I have to.
I like talking about books with other people
I like to spend my spare time reading
I read only if I need information
Reading is an important activity in my home
Parents' reading habits
When you're at home, how often do you read for your own enjoyment?

Table A2. Reading Motivation Scale – Hungarian.

Constructs and items

Mastery goal orientation[*]
I really wanted to understand this assignment.
I wanted to do better on this assignment than I have done before.
I wanted to learn as much as possible.
I wanted to understand this assignment so I worked as hard as I could.
I wanted to learn something new on this assignment.
Performance goal orientation[*]
I wanted to do well on this assignment so others will think I am smart.
I wanted to get a good grade on this assignment.
I wanted the teacher to think I am doing a good job on this assignment.
I wanted others to think I am smart.
I wanted to do better on this assignment than other students.
Social motives[**]
I talk to my friends about what I am reading
My friends and I like to trade things to read
I read what others recommend
I like to help my friends with their schoolwork in reading
I like to tell others about what I am reading
I read things to talk about
I recommend readings to others
Leisure attitude[***]
How do you feel when you read a book on a rainy Saturday?
How do you feel about spending free time reading?
How do you feel about reading for fun at home?
How do you feel about reading different kinds of books (magazines, novels, etc.)?
How do you feel about reading for fun on the internet?

Table A2. Continued.

Constructs and items

School attitude[***]
How do you feel about reading in school?
How do you feel about reading your school books?
How do you feel about learning from a (history, biology, etc.) book?
How do you feel about doing reading workbook pages and worksheets?
How do you feel about reading for reading (Hungarian) class?
Reading self-concept[****]
I am good at reading
I am interested in reading
I am dumb at reading
I enjoy doing work in reading
Work in reading is easy for me
I look forward to reading
I get good marks in reading
Value of reading[*****]
Reading helps to solve everyday problems.
Reading helps to pursue own goals.
Reading is necessary in order to be able to participate in adult life.
Reading is not important for the career.
Reading helps to enlarge one's knowledge.
Only good readers can be good students.
You can have good grades even if you are not a good reader.

Notes: Translation of the Hungarian questionnaire; *adapted from Meece & Miller (2001); **adapted from Wigfield and Guthrie (1997); ***adapted from McKenna & Kear (1990); ****adapted from Marsh (1990); *****based on Schoor (2006).