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Language Teaching Strategies' Impact on Third-Grade Students' Reading Outcomes and Reading Interest

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Abstract

Primary school students have difficulties with text comprehension, and therefore support from teachers via proper language teaching strategies is needed. The aim of the study was to determine the impact of language teaching strategies on students' reading outcomes and reading interest. In the current paper, two reading outcomes – vocabulary knowledge and understanding text – and students' interest in reading were considered. In the study, 220 Estonian-speaking primary school students and their native language teachers (N = 12) from 12 schools participated. The results revealed that interest in reading, vocabulary knowledge and text comprehension were positively correlated. Path analysis indicated that the strategy of developing reading interest had the strongest impact on both reading outcomes and students' reading interest. In addition, the strategy of developing vocabulary had a positive effect on students' vocabulary knowledge. Surprisingly, the strategies of teaching text comprehension and teaching grammar rules had negative effects on students' reading outcomes and reading interest. The findings emphasise the importance of proper usage of teaching strategies in primary school language lessons.

Keywords: Vocabulary knowledge, text comprehension, reading interest, language teaching strategies, primary school.

Introduction

An important goal of primary education is the development of text comprehension among students. Generally speaking, reading has two fundamental qualities, one of which is known as reading outcomes, which includes vocabulary knowledge and understanding the meaning of text. The other side constitutes the will to read – in other words, interest in reading (Cambria & Guthrie, 2010). A good reader is one who has developed both sides. Although skilful students may be able to read, without will, their academic progress might be limited, making it very difficult to become an effective reader in the long term (Cambria & Guthrie, 2010; Guthrie, Klauda, & Ho, 2013).

It is accepted that teaching practices influence children's learning and development (Hamre & Pianta, 2010), but findings concerning which specific teaching strategies best promote children's academic and reading interest development are mixed. Although several studies have been carried out on native language teaching strategies, many of them have been examined separately from the developing students' reading interest (Applegate & Applegate, 2010; McGeown et al., 2015) and teaching text comprehension strategies (Cain & Oakhill, 2011; Tang et al., 2017). In light of the importance of supporting students' reading outcomes and interest in reading, an investigation of the impact of different language teaching strategies is clearly warranted.

Hattie (2015) demonstrated effect sizes related to student achievement. He found two medium effects, one between the strategy of developing vocabulary, and the other between the strategy of teaching text comprehension and students' achievement. Rockoff (2004) also found significant effects between teachers' teaching strategies and students' vocabulary and reading comprehension. On the other hand, Foorman et al. (2006) stated that focusing on teaching grammar rules was not beneficial to proficient readers' vocabulary knowledge. However, there is evidence that certain teacher strategies may hinder students' reading interest (Lerkkanen et al., 2012). The main problem lies in the fact that it is not fully understood what kinds of teaching strategies will most effectively improve students' reading outcomes and interest in reading.

Accordingly, the purpose of the present study was to comparatively examine the effectiveness of the following teaching strategies on primary school students' reading outcomes and interest in reading: developing reading interest and vocabulary, teaching text comprehension, and grammar rules.

Students' Reading Outcomes and Interest in Reading

To master how to comprehend a text, students must commit to becoming fluent in decoding and recognising words, continually expanding their vocabulary knowledge, learning to make inferences, and analysing text critically (Foorman et al., 2006). Because of the hierarchical nature of understanding text, slow growth along any of the previously mentioned dimensions can result in significant difficulty, as well as negative consequences, for students' text comprehension and achievement more generally as they progress through school (Hulme & Snowling, 2015).

Vocabulary knowledge is key to successful text comprehension (Silva & Cain, 2015) and is considered a reading outcome (Cambria & Guthrie, 2010). When children begin learning to read systematically in school, emphasis is placed on the acquisition of word-recognition skills (Becker, McElvany, & Kortenbruck, 2010). In third grade, students are expected to have mastered decoding skills, and the focus of reading instruction thus shifts to more complex aspects of reading – namely, vocabulary knowledge and text comprehension (Kigel, McElvany, & Becker, 2011). Researchers have found that to comprehend the text, students should understand 90% of the words (Hirsch, 2003; Nagy & Scott, 2000). Difficul-

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ties may occur when the text consists mostly of unfamiliar words, which can in turn affect the fluency and speed of reading. Sometimes failure to understand even a few words in a text can have a negative impact on comprehension (Saxton, 2010). Children with restricted vocabulary may have trouble with comprehension and recall of text (Perfetti, Landi, & Oakhill, 2005).

Text comprehension is a complex process in which learners must decode and recognise words, aggregate the meaning of words into larger units, and summarise the content (Cain & Oakhill, 2011; Hulme & Snowling, 2015); therefore, text comprehension is an ultimate reading outcome (Cambria & Guthrie, 2010). Comprehension is the common thread in instruction across all subject areas. In the text comprehension process, readers aged 7 to 12 decode words, retrieve their meanings, combine these meanings into larger units such as clauses and sentences, and integrate information across different parts of the text. Longitudinal studies have shown that children have problems with text comprehension (Cain & Oakhill, 2007) even when their word recognition skills are age-appropriate (Catts et al., 2005). The text is considered too difficult for readers if they understand less than 85% of its content (Smith & Dechant, 1961). Understanding what is read is an essential aspect of good literacy and, consequently, has a strong influence on students' wider educational success (Silva & Cain, 2015).

Reading interest has an important role in text comprehension because it acts as the basis for students to move towards their reading goals (Wigfield et al., 2015). According to Guthrie, Klauda and Ho (2013), while comprehending the text, it is vital that students have an interest in reading. The authors considered reading interest the most important part of text comprehension because it motivates students to read for enjoyment. Reading interest was found to be positively correlated with text comprehension – the more students read, the more they understand (Tang et al., 2017; Wang & Guthrie, 2004; Wigfield et al., 2016). Becker, McElvany and Kortenbruck (2010) found that reading interest has ongoing positive effects on reading achievement. In their study, reading interest in fourth grade was positively related to reading achievement in sixth grade. Children who see reading as a desirable activity tend to read more frequently and thus develop better reading skills.

Language Teaching Strategies

Each teaching practice plays a special role in students' vocabulary knowledge, text comprehension development and reading interest. Teachers must account for various curriculum-, child- and classroom-related factors. Teachers are continuously required to make decisions about their instruction and support, taking into account the needs of students and the aims of teaching (Pianta, 2006). Silva and Cain (2015) stressed that developing students' vocabulary knowledge and teaching grammar rules support further text comprehension. Primary school students' needs are also supported in the development of reading interest. Applegate and Applegate (2010) indicated that comprehending the text and reading interest are connected, and therefore it is extremely important to support all reading outcomes, especially students' interest in reading, through different language teaching strategies.

Just as increasing vocabulary knowledge should occur on a continuous basis, so too should vocabulary instruction. The following recommended strategies for teaching vocabulary will be described in further detail. Marzano (2004) developed a six-step process for teaching vocabulary to students of all ages. The author suggested that the first three steps aim to introduce the new word: (1) an explanation of the word; (2) asking students to describe the word in their own words; (3) asking students to construct a picture or symbol representing the word. The final steps involve putting the new word in different context: (4) engage students in activities that help them add new words to their knowledge; (5) ask students to discuss the terms with one another; (6) involve students in games that allow them to play with the terms. Fisher and Frey (2008) recommended four steps for developing vocabulary knowledge. In the first step, teachers should give a student-friendly definition of the new word and then assess how students use it. The second step suggests providing opportunities for students to use new vocabulary on their own, with the teacher present to assist, when needed. The third step includes ways to clarify meaning and usage in groups – students teaching their peers. The last step includes practical use of the term in independent reading, writing and discussion. Foorman et al. (2006) discovered a three-way interaction between word reading, teaching effectiveness, and time spent on teaching grammar. This interaction revealed positive relationships between vocabulary knowledge and reading ($p < .01$) on the one hand, and ratings of teaching effectiveness on the other. The higher the reading scores, the higher the achievement on reading outcomes; likewise, the higher teachers' effectiveness ratings were, the higher the reading outcomes.

Focusing on the strategy of teaching grammar rules is also important because efficient language learning does not occur without a good knowledge of grammar (Sekelj & Rigo, 2011). Grammar is considered to be a tool for facilitating understanding of the complex details of text comprehension (Silva & Cain, 2015). At a young age, children need to be active, and methodology should therefore acknowledge this during the teaching process, allowing them to participate orally and physically as much as possible in dialogues, role playing and dramatization (Sekelj & Rigo, 2011). Rhymes, riddles, songs, story-telling, role-playing, crossword puzzles and other games could be very helpful and efficient in introducing and practising grammar rules. Teaching must be planned in such a way that learning is an interesting process. As practice has shown that explicit learning strategies in formal environments have a negative correlation with successful acquisition, mechanistic drill exercises can produce boredom and loss of motivation on the part of the learner; accordingly, such exercises should be reduced to the necessary minimum (Foorman et al., 2006; Sekelj & Rigo, 2011).

The strategy of teaching text comprehension has a rather large effect size ($d = .60$) on student achievement; therefore, it is very important to investigate this area (Hattie, 2015). One of the most widespread instructional frameworks used in primary grades and designed to increase students' reading comprehension and motivation for reading is Concept-Oriented Reading Instruction (CORI) (Guthrie et al., 2004). CORI comprises multiple strategies, i.e., activating background knowledge and summarising the text. Due to the fact that CORI was designed to teach comprehension through science and reading, it is not always possible to use it in native language lessons.

In a survey of members of the International Reading Association, teachers identified creating interest in reading as the research issue they cared most about, which brings us to the investigation of the strategy of developing reading interest as a very important topic (O'Flahavan, Stein, Wiencek, & Marks, 1992). Teachers can implement practices in the classroom that either support or undermine students' reading interest. Wigfield and Guthrie (1997) documented

that students who are interested in reading spend 300% more time doing so than students who have low reading interest. To ensure reading interest, it is essential to affirm that a specific text a teacher choses for students to read is relevant, e.g., linking text and activities to real-life experiences and ensuring they are culturally relevant (McRae & Guthrie, 2009).

Estonian Context

In Estonia, by the end of the primary stage of basic school (i.e., the end of third grade), a pupil "is capable of finding and understanding information in texts (including data, terms, characters, activities, events, time and place) and presenting it orally and in written form" (Põhikooli riiklik õppekava, 2011, § 7). Third-grade students' text-comprehension, listening skills and writing skills are assessed with the compulsory Estonian Replacement test. These test results have been declining when compared with results from previous years (Müürsepp, 2017). In 2017, the overall mean result in third grade was 79.7% (in 2016, it was 85%; in 2015, it was 83.3%; in 2014, it was 81.5%). Estonian primary school students were found to experience difficulties summarising and analysing texts (Author 2, 2016). According to the national curriculum for basic schools, Estonia has no special curriculum on reading. There is one integrated syllabus for Estonian Language and Literature up to Grade 4 that includes a wide range of pedagogical advice for teachers (develop critical thinking, deepen understanding of topics, etc.) but still leaves enough room for teachers to make their own decisions. Vocabulary and grammar are developed by working with academic and fiction texts; therefore, teachers are key to an effective learning and teaching approach (Põhikooli riiklik õppekava, 2011).

The level of education and the quality of teacher training indicate that teachers in Estonia are well educated. About 75% of basic school teachers have trained as teachers in universities (Eisenschmidt, 2011). Class teachers receive a master's degree with education as a major. This degree provides the class teachers' qualification for practising in a comprehensive school from Grades 1 to 6, and for teaching all subjects on that level (Eisenschmidt, 2011). In primary grades, teachers are expected to have good skills for instructing students (Ruus et al., 2008). Estonian teachers are known to use comprehension development and knowledge implementation, such as rote learning practices, that maximise vocabulary skills and text comprehension (Author 2, 2010). Altogether, Estonian experienced teachers tend to use teaching strategies that are based on rules, while less experienced teachers prefer integrated strategies (Author 2, 2010). While Estonian teachers mostly prefer to use strategies that support basic knowledge of vocabulary and grammar, more advanced knowledge among students (i.e., understanding the main idea of the text) might not yet be fully developed. There is still insufficient research about what is really going on in the everyday classroom (Kerge, Puksand, Sulkunen, & Uusen, 2016). Therefore, determining how language teaching strategies support students' reading outcomes and interest in reading is necessary.

Aim and Hypotheses

Different studies have examined relations between teaching strategies and students' vocabulary knowledge, how the meaning of the text is understood, and interest in reading (Cain & Oakhill, 2011; McGeown et al., 2015; Tang et al., 2017). However, what kinds of language teaching strategies will most effectively support primary school students' reading outcomes and interest in reading is not fully understood. The aim of the present study was to determine to what extent different teaching strategies support third-grade students' vocabulary knowledge, understanding of the meaning of the text, and interest in reading. Three goals and hypotheses were established on the basis of earlier studies.

First, how strongly students' vocabulary knowledge, understanding of the meaning of the text, and interest in reading are connected needs to be examined. In broad terms, text comprehension is the ability of readers to obtain meaning from texts, where words must first be decoded and then combined with new knowledge into a whole (Hulme & Snowling, 2015). Reading interest supports these processes, while successful reading fosters increased interest in reading more often. We assumed that students' reading outcomes were strongly correlated with each other.

Second, how often teachers use different language teaching strategies should be investigated. In primary school, native language lesson teachers prefer to develop students' vocabulary knowledge and grammar (Silva & Cain, 2015). While stressing the strategies of developing vocabulary and teaching grammar rules, teachers may not have enough time to use the strategies to teach text comprehension or develop students' reading interest. We expected that teachers who use some strategies more frequently will use others less frequently.

Third, how language teaching strategies impact students' vocabulary knowledge, understanding of the meaning of the text, and interest in reading should be analysed. Previous research has shown (Foorman et al., 2006; Hattie, 2015; Silva & Cain, 2015; Tang et al., 2017) that teaching strategies are effective in fostering students' reading outcomes and interest in reading. We hoped to demonstrate the same results in our study of the efficiency of the strategies. On the basis of previous research, we constructed a hypothesised model of the relations among the above-mentioned teaching strategies and students' vocabulary knowledge, understanding of the meaning of the text, and interest in reading (see Figure 1). In the hypothesised model, all the teaching strategies were directly connected to teachers' third-grade students' vocabulary knowledge,

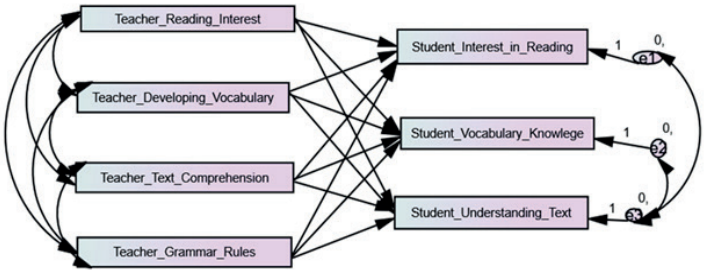

Figure 1. Hypothesized model of the impact of language teaching strategies on students' reading outcomes and interest in reading

understanding of the meaning of the text, and interest in reading (one-way arrows from teachers to students). Double-headed arrows represent covariance between the strategies. The endogenous variables (students' interest in reading, vocabulary knowledge and understanding text) may be affected by variables and factors stemming from outside the model (external effects, including measurement error). These effects are depicted by the 'e' that marks error terms in the model (see Figure 1).

Method

Sample

The study's dataset was based on 220 third-grade students and their 12 native language teachers. Participants were chosen non-randomly from 12 Estonian primary schools, which, in Estonia, include Grades 1 to 6 (age 7 to 13). The type of school and students' native language were taken into account. All participants' principal language was Estonian. Students and teachers from smaller (43 students and 5 teachers) and larger (177 students and 7 teachers) schools in rural and urban areas were included. All teachers taught in regular classes; the average class size was 21.14 students (*SD*= 4.56; min= 7; max= 26). There were 103 (46.8%) boys and 117 (53.2%) girls in the sample. The students' average age was 9.10 years (*SD*= .37; min= 8; max= 11). All teachers were female, and their ages ranged from 27 to 62 years (*M*= 46.92; *SD*= 10.06). Their teaching experience ranged from two years to 41 years (*M*= 22.12; *SD*= 12.38). All teachers had taught all participating students since the first grade.

Instruments

Theory and antecedent studies (Cain & Oakhill, 2011; Cambria & Guthrie, 2010; Müürsepp, 2017; Wang & Guthrie, 2004; Wigfield & Guthrie, 1997) were the basis for developing the research instruments for third grade. Students' instruments were piloted among third graders (*N*= 58). After piloting, minor changes were made to the layout of the instruments, and in addition, students' background data (e.g., age, gender) were gathered. Instruments for the third-grade students comprised three parts: a questionnaire for measuring students' reading interest, a text comprehension test, and a test to measure vocabulary knowledge.

(1)Questionnaire for measuring students' reading interest was compiled in consideration of the background questions (i.e., reading for fun, reading to learn something new, reading for a certain amount of time per day) in the PISA survey (2015), the requirements of the national curriculum for basic schools of Estonia (2011) and several studies (Cain & Oakhill, 2011; Wang & Guthrie, 2004; Wigfield & Guthrie, 1997). The students were asked to decide whether they agreed or not with the statements about reading (e.g., Reading is interesting). The questionnaire contained 21 items. A three-point scale was used: 1 – I do not agree, 2 – I agree partially, 3 – I agree. The scores of the questionnaire were calculated as means of the summed items of the three-point scale (max = 3). The questionnaire's internal consistency (Cronbach's alpha) was .88; the reliability was considered good (Hutcheson & Sofroniou, 1999).

(2)Text comprehension test started with a reading task. The text was a modified version of an Estonian children's fictional text, 'Fame' (2071 letters, 350 words, 40 sentences, average length of words was 5.76 letters, and average length of sentences was 8.75 words). After reading the text, students completed a test. Their text comprehension was measured using five tasks, which included a total of 19 items. In the first task, recognising the right information from the text was measured (4 items). Students had to decide whether the sentences were in accordance with the text content (e.g., A boy read a new book). In the second task (3 items), students were given three sentences for each passage and had to decide which sentence best expressed the main idea of the passage (e.g., first passage – *(a) Friends made plans for their vacation, (b) Friends ordered a lot of cakes, (c) Friends went to the seaside to have a vacation*). In the third task, students were given five questions and five answers about the three passages and had to mark the right answer to each and indicate to which text passage each answer belonged (e.g., *What did friends do in the coffee shop? They planned their vacation*). In the fourth task (1 item), students had to choose, from four sentences, the one which best summarised the content of the whole text (e.g., *Friends spent their time in a coffee shop*). The last task consisted of five multiple-choice questions focused on understanding the content of the text (e.g., *What kind of text was this? (a) fiction, (b) based on real life, (c) folktale*). The answers in all tasks were coded dichotomously: 1 (right answer), 0 (wrong answer). The scores from the test were calculated as sum scores (max= 19). The internal consistency of the text comprehension tasks was .79.

(3)Vocabulary knowledge test. Students' knowledge of words was measured using words from the reading task (9 items). Only words included in the 10,000 most frequently used words in the Estonian written language were used (Kaalep & Muischnek, 2002). The students' task was to connect words from two columns, where the words in the first column were from the text, while the words in the second column were synonyms in random order. Nine words were given to the students (e.g., gape, believe, people), who had to choose the correct synonyms from 27 words (e.g., gaze, guess, nation). The students' answers in all tasks were coded dichotomously: 1 (right answer), 0 (wrong answer). The scores from the test were calculated as sum scores (max= 9). The internal consistency (Cronbach's alpha) of the task was .72.

(4)Teachers' teaching strategies questionnaire. Altogether, 31 items were included in the questionnaire. The questionnaire was designed on the basis of several studies (Guthrie et al., 2004; Marzano, 2004; Sekelj & Rigo, 2011; Silva & Cain, 2015). In these studies, the researchers demonstrated the supportive role of developing vocabulary knowledge and teaching grammar rules (see Sekelj & Rigo, 2011; Silva & Cain, 2015), how to improve vocabulary knowledge (Marzano, 2004), and how to develop students' reading comprehension (Guthrie et al., 2004) and reading interest in teaching text comprehension (McRae & Guthrie, 2009). The questionnaire was piloted among four native language teachers in primary school. After piloting, small changes were made to the layout of the questionnaire. The teachers were asked to decide how often they used the described strategies in their native language lessons.

The questionnaire included four parts. The first part – *developing reading interest* – was aimed at measuring the strategies teachers used to develop students' reading interest, e.g., *I use discussions about the texts in my lessons to create reading interest* (8 items, α=.77). The second part – *developing vocabulary* – was aimed at measuring the strategies teachers used to improve students' vocabulary skills, e.g., I *use wordgames to develop students' vocabulary knowledge* (5 items, α=.63). The third part – *teaching text comprehension* – measured the strategies teachers used to improve students' ability to comprehend the text, e.g., *I use tasks where students need to find out the main idea of the text* (14 items, α=.77). The fourth part – *teaching grammar rules* – assessed the strategies teachers used to improve

students' grammar knowledge, e.g., *I present a specific grammar rule and let students give examples about the rule* (3 items, α= .76). A six-point Likert scale was used: 1 – not at all, 2 – not more than once a month, 3 – twice a month, 4 – once a week, 5 – twice a week, 6 – almost every day. The scores of the questionnaire were calculated as means of the summed items of the six-point scale (max= 6).

Procedure

School principals and teachers were first contacted by email to inform them of the study and invite them to participate. Next, parents were asked for written consent for their children to participate in the study. The consent documents, questionnaires for measuring students' reading interest, and text comprehension and vocabulary knowledge tests were taken to the schools by the authors and assistants in the study in closed envelopes. The procedure relied on written instructions and was discussed before assessment. The students filled in the questionnaire and test on paper during one language lesson (approximately 45 min) under teacher supervision. The text and questions about its content were in the hands of students the entire time. Students were not allowed to consult with each other. Students who did not mark an answer for at least one-half of the questions in text comprehension test were excluded from the analysis. After the students had completed the test, teachers' language teaching strategies were measured. Native language teachers from all 12 classes filled in the paper questionnaires; the response rate for the teachers was 100%.

Data Analysis

SPSS Statistics programme version 22.0 was used for the data analysis. Pearson's correlation was used for two purposes: first, to detect correlations between students' reading outcomes and interest in reading; and second, to determine the frequency of usage of teachers' language teaching strategies. Cohen's proposed guidelines were used for explaining correlations: $r > .65$ strong correlation; $.35 < r < .65$ moderate correlation; $r < .35$ slight correlation (Cohen, Manion, & Morrison, 2007).

The effect of teaching strategies on students' reading outcomes was assessed by path analysis with SPSS 22.0 and AMOS (Arbuckle, 1995). Elaborated model should have acceptable measures of goodness-of-fit on which to base conclusions about the impacts. The impacts allows the assessment of the model fit of the hypothesised model (Figure 1) and the development of a final model (Figure 2), while also identifying paths with nonsignificant contributions from the hypothesised model. It is essential to observe several fit indices to assess model fit. The chi-square goodness-of-fit measure (Hu & Bentler, 1999) and the root mean square error of approximation (RMSEA) have been described as indicating a poor fit if greater than .10; a mediocre fit if between .08 to .10; and a close fit if between .05 to .08. Cutoff points of less than .06 or .05 have been proposed to indicate a good fit (Byrne, 2001; Hu & Bentler, 1999). Also, the comparative fit index (CFI) and incremental fit index (IFI) have been described as indicating a good fit with cutoff points of .90 or .95 (Byrne, 2001).

Results

Reading outcomes, interest in reading and the use of language teaching strategies

First, to determine how strongly students' vocabulary knowledge, understanding of the meaning of the text and interest in reading were related, Pearson's correlations were carried out. Means, standard deviations and correlations of the students' reading outcomes and interest in reading are given in Table 1.

Table 1. *Descriptive Statistics and Correlations of Students' Interest in Reading and Reading Outcomes*

	M	*SD*	1	2	3
1. Interest in reading	2.40	0.86	-		
2. Vocabulary knowledge	7.14	2.25	0.17*	-	
3. Understanding of the meaning of the text	12.55	3.88	0.20**	0.55**	-

The strongest association occurred between students' vocabulary knowledge and understanding of the meaning of the text (r= .55). A low but statistically significant correlation occurred between interest in reading and understanding of the meaning of the text (r= .20). This result revealed that students' interest in reading supports text comprehension. In addition, a slightly significant correlation was identified between interest in reading and vocabulary knowledge (r= .17). Students' average level of interest in reading was 2.40*100/3= 80%. The results indicate that interest in reading was high. The average level of vocabulary knowledge was 7.14*100/9 = 79%. This is considered an optimal result for that specific age group. The average level of understanding of the meaning of the text was 12.55*100/19= 66%. This is slightly lower than recommended for independent reading, but good in testing situations for achieving better differentiation among students.

Next, to examine the frequency of usage of teachers' language teaching strategies, we used Pearson's correlations. All associations were positive, meaning some teachers used some strategies more frequently than others. The means, standard deviations and correlations of the teachers' strategies are provided in Table 2.

There were several moderate correlations between teaching strategies. The highest correlation was found between the strategy of developing reading interest and developing vocabulary (r= .52). This result indicates that developing students' reading interest will improve their vocabulary knowledge. Slight but significant correlations were found

Table 2. *Descriptive Statistics and Correlations of Teachers' Language Teaching Strategies*

	Items	*M*	*SD*	1	2	3	4
1. Developing reading interest	8	4.74	0.42	-			
2. Developing vocabulary	5	4.93	0.62	0.52**	-		
3. Teaching text comprehension	14	4.58	0.70	0.31**	0.41**	-	
4. Teaching grammar rules	3	4.09	0.75	0.31**	0.35**	0.43**	-

Note: ** indicates $p < .01$; * indicates $p < .05$; Items= number of items in the strategy

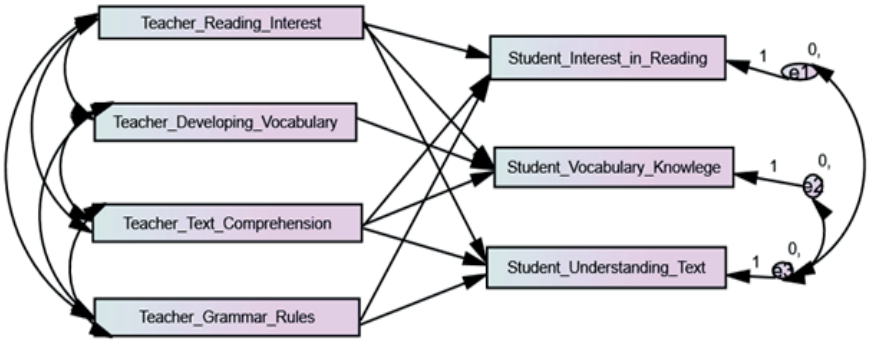

Figure 2. Final model of the impact of language teaching strategies on students' reading outcomes and interest in reading

between the strategies of teaching text comprehension and developing reading interest (r= .31), and between teaching grammar rules and developing reading interest (r= .31). Teachers used the language teaching strategies up to two times per week. The most often used strategy was developing vocabulary, while the least often used strategy was teaching grammar rules (see Table 2).

The impact of language teaching strategies on students' reading outcomes and interest in reading

To determine how language teaching strategies impact students' reading outcomes and interest in reading, path analyses were carried out. We built the final trimmed model (Figure 2) after modifying the hypothesised model (Figure 1). We used several fit indices for assessing model fit. The final model demonstrated a close fit to the data: df= 4; RMSEA= .00; CFI= 1.00; IFI= 1.005; χ^2= 2.307, p< .001.

In the final model, the paths from developing reading interest to all students' reading outcomes and interest in reading reflected a positive impact (see Table 3). The paths demonstrated that teachers developing students' reading interest directly supports their reading outcomes and interest in reading.

Table 3. *Standardised Direct Effects in the Final Model of Language Teaching Strategies and Students' Interest in Reading and Reading Outcomes*

Teaching strategies	Interest in reading	Vocabulary knowledge	Understanding the text
Developing reading interest	.23	.35	.32
Developing vocabulary		.09	
Teaching text comprehension	-.07	-.16	-.12
Teaching grammar rules	-.06		-.12

Some of the impacts were rather small, but they were useful for the quality of the model. In the final model, teachers' teaching strategy of teaching text comprehension had a negative impact on students' reading outcomes and interest in reading. Additionally, emphasising grammar rules diminished interest in both reading and understanding of the meaning of the text (Table 3).

Discussion

As proper support for primary school students' reading outcomes and interest in reading is vital, it is important to investigate the impact of different language teaching strategies on students' vocabulary knowledge, text comprehension and interest in reading. The main focus of this study was to determine the impact of language teaching strategies on students' reading outcomes and interest in reading. The results showed that the strategy of developing reading interest had the strongest positive impact on all students' reading outcomes and interest in reading. Negative impacts were also identified between the strategy of teaching text comprehension and all students' reading outcomes and interest in reading. Likewise, negative impacts also occurred between the strategy of teaching grammar rules and students' interesting in reading and understanding of the meaning of the text. In addition, we observed positive relations between students' reading outcomes and interest in reading. The overall results, based on our sample, indicate the importance of using language teaching strategies in primary school native language lessons.

Students' Reading Outcomes and Interest in Reading

As hypothesised, students' reading outcomes and interest in reading were positively correlated. The strongest connection was found between vocabulary knowledge and understanding the text. Similarly, other researchers have found vocabulary knowledge to be related to text comprehension (Oakhill & Cain, 2012; Silva & Cain, 2015). Vocabulary alone is considered a predictor of text comprehension (Silva & Cain, 2015). It has been stated that children should understand 90% of the words in a text in order to comprehend it (Nagy & Scott, 2000). Our results showed that approximately 80% of the words were understood. This affirms that early vocabulary development is extremely important for the development of students' text comprehension.

Additionally, we found that students' interest in reading was weakly and positively correlated with their vocabulary knowledge and text comprehension. These results are in line with those generated in previous studies (e.g., Wang & Guthrie, 2004; Wigfield et al., 2016). For example, Retelsdorf, Koller and Möller (2011) found low and positive correlations between reading interest and reading comprehension (ranging from .27 to .32). However, Kikas and colleagues (2017) found that students' interest in reading was not associated with reading comprehension at all. The very low correlations in our study can be explained by the fact that reading interest may not be strongly conducive to gaining more competence in reading. Another possible explanation for our results may be that we asked general questions about reading interest, while vocabulary knowledge and text comprehension were measured with respect to specific tasks. These tasks might not exactly represent the texts that are usually read and analysed. Therefore, we do not have strong evidence about whether

students found this particular text interesting, but interested children do invest more time and effort to fully understanding different texts (Becker et al., 2010).

Teachers' Use of Language Teaching Strategies

We suspected that some teachers used some strategies more frequently than others. In this case, some of the correlations between the usage of strategies should have been negative. On the contrary, however, the results showed that teachers who used one strategy more frequently also frequently used others to support students' reading outcomes and interest in reading. One potential explanation for this finding could be that some teachers use their time more effectively than others. According to TALIS, which examines teachers' beliefs, attitudes and practices in different schools and countries, one in four teachers in most countries lose at least 30% of their lesson time, and some lose more than 50%, through disruptions and administrative tasks. Therefore, teachers should plan their activities carefully and use their time effectively (OECD, 2014).

Second, the strategies were used on average once or twice per week. This is possible if teachers use more than one strategy in a lesson. Author 2 (2014) found that in Estonia, many teachers use some teaching activities more often than others in response to their students' actual needs. They stressed that it is necessary to consider, for example, students' level on knowledge in a particular field. Considering the time constraints of lessons, it is possible that teachers combine different strategies. In their study of 70 third-grade teachers in Estonia and Finland, Tang et al. (2017) found that combining strategies may have positive effects on text comprehension while providing the opportunity to use several strategies in one language lesson.

Impact of Language Teaching Strategies on Students' Reading Outcomes and Interest in Reading

We hypothesised that language teaching strategies impact students' reading outcomes and interest in reading. This assumption was partially confirmed. Our study revealed that students' reading outcomes and interest in reading were mostly supported by the strategy of developing reading interest. We found that when teachers use this strategy, students' reading outcomes and interest in reading are supported. Students who read more automatically develop their own vocabulary (Applegate & Applegate, 2010). This finding explains the importance of developing reading interest among students because interested readers read more often than their less-interested peers (Guthrie et al., 1999).

The strategy of teaching grammar rules had a negative effect on students' interest in reading as well as their understanding of the meaning of the text. Foorman et al. (2006) found that when teachers spent more time teaching grammar rules, their students tended to have lower word reading outcomes. Author 3 (2015) investigated the difference between the Programme for International Student Assessment (PISA) 2009 reading results for Finland and Estonia using characteristics of teaching and learning. He found a negative effect between memorisation strategies and students outcomes (d = - .50) in Estonia. Therefore, based on our sample, too much attention to grammar rules and drilling is not beneficial for proficient readers' vocabulary knowledge. Estonian language lessons in primary school involve grammar teaching and literature in the same lesson. Therefore, in their opinion, teachers must use strategies that are both fast and efficient (Põhikooli riiklik õppekava, 2011). Teachers must emphasise grammar rules, but primary school students also need strategies that will improve their analysis and synthesis skills in terms of text comprehension (Gleason & Ratner, 2009). Emphasising grammar constructions through constant drilling and memorisation diminishes students' interest in reading (Sekelj & Rigo, 2011).

A small, direct negative effect was also found between the strategy of teaching text comprehension and students' understanding of the meaning of the text. Text comprehension is more abstract and difficult to teach than teaching grammar constructions or vocabulary. Contrary to our results, Hattie (2015) found a rather large effect size (d = .60) between the strategy of teaching text comprehension and students results. Moreover, Rockoff (2004) demonstrated teachers' effects on text comprehension among elementary school students. One reason why our study generated opposite results might be that teachers believe they are teaching text comprehension when in fact they are not. Estonian Language and Literature uses one integrated syllabus up to Grade 4. Vocabulary and grammar are developed by working with academic, nonfiction and fiction texts (Põhikooli riiklik õppekava, 2011). This situation might create the impression that teachers are teaching text comprehension when they are actually focusing on other skills (i.e., developing vocabulary or grammar). Moreover, the Estonian Language and Literature syllabus states that teachers should use a wide range of activities and instruction techniques to develop students' text comprehension (Kerge et al., 2016). The syllabus also includes a substantial amount of pedagogical and methodological advice for teachers, yet leaves room for teachers to make their own decisions, i.e., to choose which literature to use (Põhikooli riiklik õppekava, 2011). Therefore, it is not clear what kinds of literature and methods teachers actually choose. For example, if a text is too difficult for the students, they will be more likely to give up because they cannot understand the meaning or main idea of the text (Gambrell et al., 2011).

Finally, our results revealed that the strategy of developing vocabulary had a positive impact on students' vocabulary knowledge. Other researchers have produced similar results: teaching vocabulary positively affects students' vocabulary knowledge (Foorman et al., 2006; Rockoff, 2004). Cain and Oakhill (2011) stressed that teaching new vocabulary in context is key for supporting students' vocabulary knowledge. They also compared the development of reading comprehension and vocabulary knowledge among children between 8 and 11 years old. This study adds to the literature by demonstrating that early reading habits and proper instruction benefit vocabulary growth. Marzano (2004) stated that vocabulary is not something that students can grasp without thorough and elaborate instruction, although proper vocabulary instruction is effective for any age group. Consequently, teachers' teaching strategies have a significant impact on students' reading outcomes.

Limitations, Implications and Conclusions

The present study had some limitations that should be considered before generalising the research findings. First, all text comprehension and vocabulary tasks were based on one fictional text. Accordingly, caution should be exercised when generalising the results to texts of other types, as these may involve different teaching strategies. Second, the number of participating teachers was quite small (N = 12). There would be more broad overview with larger sample of teachers. Third, based on current study, third-graders may not yet possess the requisite skills to determine their interest in reading. Further, they tend to

agree with assessments by adults, and may thus give responses based on what they believe others expect from them. Future studies should employ additional methods (e.g., teacher reports) for examining students' interest. Fourth, we did not observe teachers in classrooms while using teaching strategies. Thus, it would be useful to do so prior to interpreting the use of language teaching strategies. Fifth, we did not considered parental education, parental socioeconomic status, number of books at home, students' reading self-efficacy, students' academic self-concept, teacher age and teacher experience in the analysis. Thus, it might give more broad vision to the results while including several different factors in the analysis.

We should also mention some implications of our study for teachers and teacher educators. Based on our sample, the findings showed that different language teaching strategies impact students' vocabulary knowledge, understanding of the text and interest in reading in different ways. Thus, based on our sample, teachers should use the strategy of developing reading interest on a daily basis because it has the strongest impact on students' reading outcomes and interest in reading. The results revealed the negative effect of teaching grammar rules on students' interest in reading and on text comprehension and therefore it might be important to determine why this negative effect occurred. To rely on our sample and results, grammar has an important role in language learning, and it is therefore essential to identify the most effective way to teach grammar via activities of interest to primary school students. On the other hand, with respect on our sample, strategies for teaching grammar rules and text comprehension should be used with caution because they might diminish students' reading interest, as our study revealed. In conclusion, reading outcomes and interest in reading should be developed together. Teachers use different strategies, but the impacts of these strategies are not the same. In contemporary schools, based on our sample, the strategy of developing reading interest seems to be the most effective for developing students' text comprehension and vocabulary. This language strategy can thus be considered central in developing primary school students' reading outcomes and interest in reading.

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