

An intervention study to prevent ‘summer reading loss’ in a socioeconomically disadvantaged area with second language learners

Linda Fälth,^{1*} Thomas Nordström,¹ Ulrika B. Andersson² and Stefan Gustafson²

¹Linnæus University and ²Linköping University

Abstract

Summer reading loss is a documented reality for many students. Research has established differences in the contribution of summer reading activity between children from families with different economic status. In this study, 120 students in Grade 2 and 115 students in Grade 3 from a socioeconomically vulnerable area participated in a summer reading intervention. In addition, a control group from the same schools comprised of 106 students from Grade 2 and 94 students from Grade 3. Almost 90% of the participating students did not have Swedish as their native language. The participants were tested on reading skills, including word decoding, nonsense-word reading, word comprehension and reading comprehension, before and after the summer vacation. The intervention was planned together with teachers from three participant schools and leisure centers. Before the summer holiday the schools arranged reading weeks and library visits. The students were encouraged to read at home during the vacation and record the number of books read on a digital platform. The results showed that the largest effect sizes between groups (intervention and control) were observed for word decoding in Grade 2 and word comprehension in Grade 3 where the intervention group improved more than the control group. If summer learning loss can be avoided or limited, the treatment can be considered worth implementing.

Keywords: *Intervention; summer reading; Grade 2–3; socioeconomic status*

Responsible editor: Tarja Alatalo

Received: April, 2019; Accepted: November, 2019; Published: December, 2019

Introduction

Summer reading loss is a well-known concept in the United States where research has established a connection between lack of reading in the summer and the existing

*Correspondence to: Linda Fälth, Linnæus University, Department of Pedagogy and Learning, 351 95 Linköping, Sweden. E-mail: linda.falth@lnu.se

© 2019 L. Fälth, T. Nordström, U. B. Andersson, and S. Gustafson. This is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 International License (<https://creativecommons.org/licenses/by-nc/4.0/>), allowing third parties to copy and redistribute the material in any medium or format and to remix, transform, and build upon the material for any purpose, even commercially, provided the original work is properly cited and states its license.

Citation: L. Fälth, T. Nordström, U. B. Andersson, & S. Gustafson. “An intervention study to prevent ‘summer reading loss’ in a socioeconomically disadvantaged area with second language learners” *Nordic Journal of Literacy Research, Special Issue: Tvärvetenskapliga perspektiv på läs- och skrivundervisning i tidiga skolår*, Vol. 5(3), 2019, pp. 10–23. <http://dx.doi.org/10.23865/njlr.v5.2013>

reading achievement gap in children from families with different economic status (Alexander, Entwisle & Olson, 2007; Allington & McGill-Franzen, 2017). Likewise, summer reading activity, or the lack of it, has been linked to summer setback (Alexander et al., 2007). Students who have developed their reading and writing skills during the past year in school will be absent from organized schooling for more than two months, a vacation and rest that in many ways is important for charging the batteries for future academic challenges. Still, this is a vacation that for many students means a decline in knowledge and developed abilities (Allington & McGill-Franzen, 2017; McCombs, Augustine & Schwartz, 2011). Studies in the US show that decoding skills decrease in 45% of the primary school students during the summer, which becomes most evident among those whose reading ability is low. In the present study, this phenomenon will be investigated through a targeted intervention to promote reading activities in the summer among Swedish 7–9-year-olds living in a socioeconomically vulnerable area.

A great many students who have developed their decoding and reading skills during the school year through teachers, books and media can subsequently identify themselves as readers. When summer vacation starts, the formal schooling often comes to an abrupt end, and soon some students will begin to lose their reading skills and strategies (Alexander et al., 2007). Children from language minority families may have limited opportunities to read, hear and speak Swedish at home during the summer. This study comprises students living in areas where many different languages are spoken, and where Swedish is not the mother tongue of the majority. Cooper, Nye, Charlton, Lindsay and Greathouse (1996) predicted that “summer break would be especially detrimental to students who speak a language at home that is different from the language of school instruction” (p. 261). The purpose of this study is to investigate the effects of a summer reading intervention on reading skills among students in grades 2 and 3 in a socioeconomically disadvantaged area.

Student backgrounds

Teachers, especially in elementary school, find that students’ reading ability is reduced at the beginning of the autumn term compared to when they left school in June. Starting the autumn term by repeating and reaffirming strategies is common, and some students even need to start from the beginning again (Atteberry & McEachin, 2016). Research has shown that the academic loss occurring during the summer is not equally distributed. Students who come from low-income families tend to regress during the summer months, while those from middle- and high-income families are more likely to maintain the knowledge and skills learned during the previous school year (Alexander et al., 2007; Borman, Benson & Overman, 2005). Analyzing data from 19 data sets, Reardon (2011) found that income-based disparities in student reading achievement have grown larger over the past four decades. Although there are many underlying causes, children of low-income families are in particular at risk of falling behind their classmates during the summer months (Allington &

McGill-Franzen, 2017; Cooper, et al., 1996). Family socioeconomic status has been linked to the access children have to books in their homes and neighbourhoods (Atteberry & McEachin, 2016). A comprehensive review (Cooper et al., 1996) as well as a later study (Atteberry & McEachin, 2016) concluded that on average students' achievement scores declined over summer vacation by the equivalent of one month's learning, and that the extent of loss was larger at higher grade levels. Importantly, they also concluded that income-based reading gaps grew over the summer where middle class students tended to show improvement in reading skills, while lower-income students tended to experience loss. Hattie (2012) notes that the exposure to a break in education and formal learning is primarily negative for those who do not meet any other stimulus to their abilities and skills during the summer vacation. He also argues that those who are not stimulated during the vacation may lose about three months in their abilities and skills. These students also, to a large extent, comprise those who already struggle with their reading ability.

A meta-analysis from 2013 (by Kim & Quinn) reviewed research on summer reading interventions conducted in the United States and Canada from 1998 to 2011. This included 41 classroom- and home-based summer reading interventions in children from kindergarten to Grade 8. Compared to the control groups, children who participated in classroom or home interventions involving child-initiated book reading activities showed significant improvement on multiple reading outcomes. The results also showed that summer reading interventions had significantly larger benefits for children from low-income backgrounds than for those from a mix of income backgrounds. In the present study, the participants came from socioeconomically vulnerable areas where more than 90% had a mother tongue other than Swedish.

There is an awareness among parents, schools and libraries of students' need to maintain their reading skills during the summer vacation. In response, several reading promotions and reading motivation efforts have been planned and implemented (Allington & McGill-Franzen, 2017). Currently, the most common efforts used to avoid summer reading loss include summer schools, summer reading programs and the reading of existing books. These three initiatives are important, but still not sufficient for many of the students who need them most (Alexander et al., 2007). In Sweden, summer school is voluntary and often available for older students in order to raise their grades. Even though we are aware that preventive work and early intervention play a crucial role in both language and knowledge development of students (Al Otaiba & Torgesen, 2007), no research, as far as we know, has been conducted on Swedish primary school students for the purpose of preventing summer reading loss.

Summer reading initiatives

As mentioned above, summer reading interventions have been implemented both inside and outside classrooms (McCombs et al., 2011). As teachers are responsible in classroom interventions for focusing students' attention on literacy activity, summer programs usually implement literacy lessons that are designed either to remediate

past academic weaknesses (Connor, Morrison & Katch, 2004; Cooper et al., 1996) or to prepare for skills and knowledge that students may encounter in the upcoming school year (McCombs et al., 2011). In home interventions, students are given access to a wide variety of narrative and informational texts during the summer months. This to promote an intrinsic motivation to read at home (Allington et al., 2010; Mol & Bus, 2011). The fundamental condition for summer interventions is that children master a basic decoding skill and now need to read widely in order to develop their reading fluency and acquire greater word knowledge (Stanovich & West, 2000). There have been few experimental studies on the effects of voluntary reading activities such as silent reading where students receive little or no assistance in selecting books or comprehending text. Also, as some students in the early elementary grades have poor decoding skills, they may not benefit from voluntary reading activities in which teachers or parents provide little or no guidance (National Reading Panel, 2000; Samuels & Horowitz, 2017). In the present study most of the participants had difficulty in mastering basic decoding, which might contradict the assumption that an intervention outside the classroom would be successful. As there was no possibility for a classroom implementation, the current intervention was prepared inside the classroom but conducted outside the classroom in the home or at the leisure center.

Research has shown that students referring to their own ability to choose the right reading literature during the summer holidays often choose literature that is either too difficult (67% of the students) or too easy (Kim & Guryan, 2010). Thus, simply giving children books is not the best solution to counteract summer reading loss, especially when they choose media and literature on their own, which does not lead to a significant development of their abilities. In line with this, the National Reading Panel [NRP], suggested that “independent silent reading is not an effective practice when used as the only type of reading instruction to develop fluency and other skills” (NRP, 2000, p. 13). Teachers can play a key role in scaffolding voluntary reading by helping children read texts fluently and self-monitor their comprehension (Stahl, 2004). Results from a study providing free books during the summer combined with teacher and parent scaffolding of oral reading and comprehension strategies, showed significant positive effects compared with the control condition, which provided books alone (Kim & White, 2008).

Improving book access for children from low-income families during the summer months and hoping for improved reading achievement is laudable but not sufficient. Teacher engagement or individually matched books may contribute to a more positive outcome. A study by Kim and Guryan (2010), comprising over 500 Grade 4 children, tested the hypothesis that scaffolding voluntary reading with appropriate text-difficulty and teacher-directed instruction could improve reading comprehension. In that study, eight books were matched to each child's independent reading level. The children were randomly assigned to receive books in the summer or fall. Books and postcards were mailed home to encourage them to carry out the intervention. The results revealed positive and significant improvements in reading comprehension,

which suggested that “the effects of a voluntary summer reading intervention could be enhanced by matching appropriately challenging books to children and by instructing children to use comprehension strategies while reading books at home” (Kim & Guryan, 2010, p. 9). Kim (2006) reported that a single-year summer book distribution program had “marginally significant” effects on fall reading achievement. This marginally significant outcome may be the result of expecting too much from a single year project. As the self-selection of books has proven an important factor in fostering reading engagement (Guthrie & Humenick, 2004), we hypothesized that working with a fair amount of fiction reading during school hours prior to the summer vacation could reinforce the importance of vacation reading. By preparing the participating students in various ways during school hours, as well as providing them with a collection of self-selected books from the library before the vacation, we could positively affect their voluntary summer reading activity and achievement and thus counteract summer reading setback. The present study was conducted within the framework of a large-scale educational project, LegiLexi, with the purpose of preventing ‘summer reading loss’ in a socioeconomically disadvantaged area, with students who are not Swedish native speakers. LegiLexi is an educational reading program, free of charge for schools, with the aim of developing all students reading ability (www.LegiLexi.org).

Method

Participants

Out of the twenty elementary schools in the selected municipality, the three schools which showed the poorest results in the LegiLexi’s test battery (comprising word decoding and reading comprehension conducted before the winter break in 2017), were offered to take part in an intervention study focusing on reading during the summer vacation. All these three schools, which are located in a socioeconomically vulnerable area, consented to participating in the intervention. Altogether 120 students in Grade 2 and 115 students in Grade 3 were included in the intervention group. All participants were encouraged to record the books they had read on the digital platform called “*Jag har läst*” (‘I have read’), www.jagharlast.se. As the intervention took place during the vacation, registering the books and the number of pages read on the digital platform was voluntary. Still, this was done by 34 students in Grade 2 and 28 students in Grade 3. The number of reported pages read varied from 22 to 817 pages in Grade 2 and from 14 to 1430 pages in Grade 3.

The data was gathered in 2018. The control group comprised a total of 208 students from Grade 2 ($n = 117$) and Grade 3 ($n = 91$). The control group population was selected from the same schools as those of the intervention group. The selection was based on measurements from the previous year (2017), when no intervention took place. 89% in the intervention group and 87% in the control group did not have Swedish as their first language.

Intervention

The libraries in the neighbourhood were engaged, and all students visited the local library during school hours at least once before the summer vacation. They were given library cards and were informed about their possibility to use digital reading and audiobooks. Reading aloud was done in all classes every day during four weeks before the vacation. During the same period intensive reading was conducted in the classes, which meant that the students read fiction during school hours every day for two weeks. The students were assisted by the school and the library to borrow books to take home over the vacation. The schools arranged parents’ meetings before the vacation to give information about the intervention and the importance of reading during the summer. The caregivers were invited by letter with a reply coupon. In addition, the teachers called all caregivers and invited them to the meeting. The teachers assessed that about twice as many turned up as on other parents’ meetings. In this study, virtually all parents were non-native Swedish speakers and were instructed in their native language due to their limited command of Swedish. All students and parents were informed about “*Jag har läst*”, and the students were asked to record the number of books and book pages they had read during the vacation. They were asked to report by sending a digital postcard with this information as well as their opinion of the book/books to the class teacher. All participants were given a T-shirt and a book each before the vacation. Before the summer vacation, the school teachers took part in a meeting at the leisure center where they were informed about the intervention as well as given opportunities for questions and discussions. With the assistance of municipal librarians, baskets containing plenty of books had been put together and handed out to the leisure centers. This not only enabled students to do silent reading every day during leisure hours, it also gave the leisure-time teachers a lot of books to choose from when reading aloud to the students. As many as 93 out of the 120 students in Grade 2 and 78 out of 115 students in Grade 3 attended leisure centers for at least three weeks during the summer. The participation rate in recording books at the digital platform “*Jag har läst*” was 34 out of 120 students in Grade 2 and 28 out of 115 students in Grade 3.

Procedure and analysis

The test results of students’ decoding, nonsense-word reading (phonological measures), word comprehension and reading comprehension were gathered at test session 1 (T1) in May 2018 and at test session 2 (T2) in September 2018, in other words, in the summer vacations after Grade 1 and Grade 2. The result section shows the grade at the post-measurement (T2). Results (raw scores) on tests measuring decoding, nonsense-word reading, word comprehension and reading comprehension (M , SD) at T1 and T2, as well as change scores calculated by subtracting the T1 scores from the T2 and baseline scores for both intervention and control groups in primary school grades 2 and 3, were presented. Paired sample t-test were used to compare within groups estimates. Welch t-tests were used to compare change scores on the corresponding tests between intervention

and control groups in grades 2 and 3. Welch t-test is appropriate to use when the variances between groups are unequal and when sample sizes differ between groups (Delacre, Lakens, & Leys, 2017). The effect sizes were interpreted according to Cohens *d* which means that 0.2 is considered small, 0.5 medium and 0.8 large effects (Cohen, 1992).

Tests

The tests comprising word decoding, nonsense word reading, word comprehension and reading comprehension were subtests from the LegiLexi test battery and all test details, including test-retest reliability can be found in the manual (Fälth et al., 2017).

Word decoding

The student was instructed to read as many words as possible from a list containing words with increasing difficulty and length (from 2 to 6 letters) within one minute. The test was performed individually and the number of correctly read words was used as a measure of word decoding, the maximum score being 100. The test-retest reliability is $r = .84-.89$ in Grade 2–3.

Nonsense-word reading

The test had the same format as the word reading test above but consists of nonsense words instead of real words. The number of correctly read nonsense words was used as a measure of nonsense-word reading, with 100 as the maximum score. The test-retest reliability is $r = .84-.86$ in Grade 2–3.

Word comprehension

The student was instructed to identify the right picture (among five pictures) that best corresponded with the word that the test-leader said. Words were successively more difficult and both nouns and verbs were used. There were 24 items and thus maximum score was 24 points. The test-retest reliability is $r = .70-.82$ in Grade 2–3.

Reading comprehension

The student read sentences and answered questions about the content by choosing between five pictures. The sentences become successively longer and more difficult. As the questions were designed so that the answers could be found directly in the text, no inference reading was required. Time constraint was 5 minutes. Maximum score was 12 points. The test-retest reliability is $r = .76-.80$ in Grade 2–3.

Results

An overview of the raw score results of reading ability tests from Test session 1 (T1) in May and Test session 2 (T2) in September 2018 for the intervention and control

Table 1. Results on tests measuring reading abilities (*M, SD*) at T1 and T2. Change scores were calculated as T2 minus T1. Welch t-test were used to compare change scores between groups.

	GRADE 2		GRADE 2		GRADE 3		GRADE 3		<i>p</i>	Cohen's <i>d</i>
	Intervention group (<i>n</i> = 120)	<i>M</i> <i>SD</i>	Control group (<i>n</i> = 117)	<i>M</i> <i>SD</i>	Intervention group (<i>n</i> = 115)	<i>M</i> <i>SD</i>	Control group (<i>n</i> = 91)	<i>M</i> <i>SD</i>		
T1										
Word decoding	34.7 (19.6)		41.6 (25.9)		62.5 (22.9)		57.0 (23.6)			
T2										
Word decoding	40.9 (18.61)		44.7 (25.5)		67.4 (23.4)		63.4 (25.7)			
Change score										
Word decoding	6.2		3.1		4.9		6.4		.27	0.2
Cohen's <i>d</i>	0.3		0.1		0.2		0.3			
T1										
Nonsense word	14.7 (8.6)		17.7 (11.4)		20.3 (10.9)		25.4 (11.3)			
T2										
Nonsense word	17.8 (9.1)		19.2 (11.9)		22.5 (11.2)		25.7 (11.5)			
Change score										
Nonsense word	3.1		1.5		2.2		0.3		0.02*	0.3
Cohen's <i>d</i>	0.4		0.1		0.2		0.0			
T1										
Word comprehension	12.1 (3.2)		12.7 (3.0)		13.7 (3.1)		14.1 (3.1)			
T2										
Word comprehension	12.3 (3.5)		13.2 (3.2)		14.5 (3.1)		13.9 (3.3)			
Change score										
Word comprehension	0.2		0.5		0.8		-0.2		0.002**	0.5
Cohen's <i>d</i>	0.1		0.2		0.3		-0.1			

	GRADE 2		GRADE 2		GRADE 3		GRADE 3		Cohen's <i>d</i>
	Intervention group (<i>n</i> = 120)	<i>M</i> <i>SD</i>	Control group (<i>n</i> = 117)	<i>M</i> <i>SD</i>	Intervention group (<i>n</i> = 115)	<i>M</i> <i>SD</i>	Control group (<i>n</i> = 91)	<i>M</i> <i>SD</i>	
T1									
Reading comprehension	4.2 (2.4)		5.0 (2.6)		7.0 (2.8)		7.2 (2.9)		
T2									
Reading comprehension	4.9 (2.4)		5.5 (3.0)		6.8 (3.0)		7.5 (3.4)		
Change score									
Reading comprehension	0.7		0.5		-0.2		0.3		0.14
Cohen's <i>d</i>	0.3		0.2		-0.1		0.1		0.2

**p* < .05.

***p* < .01.

groups is given in Table 1. The difference between the measure T2 and T1 is named change score in the table. The reading skills presented include word decoding, nonsense-word reading, word comprehension and reading comprehension.

In Grade 2 the measures between T1 and T2 (within groups) showed an increase in all tests for both intervention and control groups (Cohen's d varied between $d = 0.1$ and $d = 0.4$ for the intervention group and between $d = 0.1$ and $d = 0.2$ for the control group). In Grade 3 there was an increase for both intervention and control groups between T1 and T2 (within groups) in all tests except for reading comprehension for the intervention group ($d = -0.1$) and word comprehension for the control group ($d = -0.1$).

Estimates of change score differences between intervention and control students showed a larger increase of the intervention group for the test measuring word decoding ($d = 0.4$) and nonsense-word reading ($d = 0.3$) in Grade 2. In Grade 3 the estimates of change score differences between intervention and control students showed a larger increase of the intervention group for the test measuring nonsense-word reading ($d = 0.3$) and word comprehension ($d = 0.5$).

Discussion

Numerous studies from the US have demonstrated that summer learning loss, particularly in reading, is a consistent and pervasive finding among children from homes with low socioeconomic status (Augustine & Schwartz, 2011; Borman & Dowling, 2006; Downey, Von Hippel & Broh, 2004). The purpose of the present study was to examine an intervention to prevent summer reading loss among younger students in a socioeconomically vulnerable area in Sweden by promoting reading activities during the summer vacation. As summer reading loss for disadvantaged children is cumulative (Alexander et al., 2007), it may be especially important to provide low-income, ethnic minority and low-performing children with access to books and opportunities to read and practise their skills during the vacation. However, the results from a study by Kim and White (2008) noted that the students who only received books during the summer did not perform differently from comparison students, "providing children with more books and opportunities to read is necessary but not sufficient for improving reading achievement" (p. 17). Our intention was thus to design an intervention study where most of the training in reading took place outside school, but that students were prepared by various activities inside school before the summer vacation.

Results from the present study indicate that students in Grade 2 who attended the intervention made greater improvements in word decoding ($d = 0.4$). Grade 3 participants' improvements in word comprehension ($d = 0.5$) and nonsense-word reading ($d = 0.3$) were better when compared to students who did not take part in the intervention. As regards the control group, we have no record of the number of books read during the summer vacation, nor did any specific training in reading take place in school before the summer. In the intervention group, the span of number

of pages read and registered is wide, ranging from students who did not register any reading pages up to 1 430 pages read. However, the results of the present study show no apparent summer reading loss, neither for the intervention group nor the control group. One reason for this might be that the participants were young and in a dynamic period of reading development. Also, there might be cultural differences related to what children do and do not do during summer, explaining the different results compared to international studies (Allington et al., 2010; Samuels & Horowitz, 2017).

Even if not all the students in this study read a large number of books, Share and Stanovich (1995) describe the self-teaching hypothesis where voluntary reading, during the summer months or otherwise, would work to enhance reading development. According to this hypothesis, each successful decoding encounter with an unfamiliar word provides an opportunity to acquire word-specific orthographic information. Such acquisition then influences reading acquisition and, perhaps, reading comprehension. The decoding ability and the capability to comprehend text independently among the students are important for the outcome of the intervention. Most of the participants in this study were not only at the beginning of developing their decoding ability, but they also (ca. 90%) did not have Swedish as their first language, which will affect the results. The results might have been different if the study had been carried out, as in most American studies of summer reading loss, among students who were more experienced readers. Chall's (1983) stage theory of reading suggests that students in grades 4 and above are more likely than younger children to have adequate decoding ability to read books independently.

When designing this study, we also considered that participation over the summer was voluntary, which was expected to lead to some discrepancies. All the students in the intervention group participated in the school activities to boost reading before the summer vacation. In line with this, earlier studies focusing on motivational factors for reading paint a dismal picture for students from low-income homes. These students showed little interest in participating in reading independently and tend to avoid reading activities. They seldom read for pleasure or for any significant amount of time after school (Allington et al., 2010; Guthrie, Coddington & Wigfield, 2009).

Earlier studies (Constantino, 2005; McGill-Franzen, Lanford & Adams, 2002) have shown that summer reading setback plays a demonstrated role in the current reading achievement gap between children from families with different economic status. One explanation has been the different access to books in voluntary reading activity between more and less advantaged students (Constantino, 2005; McGill-Franzen et al., 2002; Neuman & Celano, 2001). Findings from Allington et al. (2010) indicate that providing easy access to self-selected books for summer reading over successive years does, in fact, limit summer reading setback. Allington et al. (2010) also found that the intervention group, which received summer books for three consecutive summers, more often reported engaging in voluntary summer reading and had significantly higher reading achievement than the control group. In line with this, the students in this study were provided by their teachers with a collection of self-selected books from

the library before the summer. Working with parents and students more intensively before summer vacation may encourage them to engage in the task. However, given the inherent difficulties in engaging parents in high-poverty schools, this may be difficult to realize. Especially as there is a connection between children who need reading support and parents that are difficult to engage (Casey & Williamson, 2011).

Reading books that are appropriately challenging for one summer may help children to practice decoding words and to acquire knowledge of new words and concepts. In this study, results of students' word comprehension showed positive effects in Grade 3 but not in Grade 2, while gains on a vocabulary assessment may not emerge until children read books that are appropriately difficult for a longer time, i.e. during multiple summer vacations. Therefore, experimental evidence is needed to determine if an intervention that increased the quantity of book reading over two or more summers could improve both reading comprehension and vocabulary. Cultural and motivational aspects of reading need to be assessed and analyzed in future studies about summer reading loss.

In this study, we have not distinguished whether the children read or listened to their books. Still, there are only a few reports indicating that a book has been listened to. The relationship between listening and reading comprehension is strong; students' ability to comprehend a written text is similar to their comprehension of the text when it is spoken (Bell & Perfetti, 1994; Gernsbacher, Varner & Faust, 1990). This relationship has been confirmed by studies that demonstrate a significant predictive relationship between listening and reading comprehension (Garner & Bochna, 2004; Nation & Snowling, 2004). The positive effect on word decoding in Grade 2 makes it reasonable to suppose that books recorded as read have actually been read rather than listened to. This pilot study demonstrates that larger-scale experimental research of similar interventions is warranted. Summer activities provide educators with an important opportunity that may have positive effects on reading outcomes for students from low-income families.

Limitations

The first limitation is the lack of random assignment to intervention and control conditions. Although this study compared similar groups of students (e.g., all students had completed grades 1 and 2, respectively, at the three participating schools, with the difference that the data for the control group had been collected a year earlier), random assignment to the intervention was not possible. The results of this exploratory study should be interpreted with caution due to the limitation that we do not have control over how much the control group read. Nor do we know whether the students who did not report any read book had read at all. The results support the assumption that the intervention group had actually read more, as they had developed more than the control group on some of the tests. Our study is a first step in this

continued practice-based research and, as part of the research within LegiLexi, we plan to proceed with a more systematic intervention study on summer reading.

Author biography

Ulrika B. Andersson, PhD student at Linköping University. Her research interests are forward-looking assessment and early reading development.

Linda Fälth, Special educational teacher, PhD, associate professor in pedagogy at the Linnaeus University in Växjö, Sweden. Her research interests are reading difficulty, dyslexia and reading development among both children and adults.

Stefan Gustafson, PhD, is an associate professor at Linköping University. His research interests are reading difficulties and dyslexia, interventions, RTI and formative assessment.

Thomas Nordström, PhD, is a senior lecturer in psychology at Linnaeus University. His research interests are reading difficulty, disability and educational measures.

References

- Alexander, K. L., Entwisle, D. R., & Olson, L. S. (2007). Lasting consequences of the summer learning gap. *American Sociological Review*, 72(2), 167–180.
- Allington, R. L., & McGill-Franzen, A. (2017). Summer reading loss is the basis of almost all the rich/poor reading gap. In R. Horowitz, & S. J. Samuels (Eds.), *The achievement gap in reading: Complex causes, persistent issues, possible solutions* (pp. 170–183). New York: Routledge/Taylor & Francis.
- Allington, R., McGill-Franzen, A., Camilli, G., Williams, L., Graff, J., Zeig, J., . . . Nowak, R. (2010). Addressing Summer Reading Setback Among Economically Disadvantaged Elementary Students. *Reading Psychology*, 31(5), 411–427.
- Al Otaiba, S., & Torgesen, J. (2007). Effects from intensive standardized kindergarten and first-grade interventions for the prevention of reading difficulties. In *Handbook of response to intervention* (pp. 212–222). Boston: Springer.
- Atteberry, A., & McEachin, A. (2016). School's out: Summer learning loss across grade levels and school contexts in the United States today. In Alexander, K., Pitcock, S. & Boulay, M. (Eds). *Summer Learning and Summer Learning Loss*, pp 35–54. New York: Teachers College Press.
- Bell, L. C., & Perfetti, C. A. (1994). Reading skill: Some adult comparisons. *Journal of Educational Psychology*, 86(2), 244.
- Borman, G. D., Benson, J., & Overman, L. T. (2005). Families, schools, and summer learning. *Elementary School Journal*, 106, 131–150.
- Borman, G. D., & Dowling, N. M. (2006). Longitudinal achievement effects of multiyear summer school: Evidence from the Teach Baltimore randomized field trial. *Educational Evaluation and Policy Analysis*, 28(1), 25–48.
- Casey, L. B., & Williamson, R. (2011). Training parents as effective literacy tutors: Increasing the procedural integrity of tutoring. *Mentoring & Tutoring: Partnership in Learning*, 19(3), 257–276.
- Chall, J. S. (1983). *Stages of Reading Development*. New York: McGraw-Hill.
- Cohen, J. (1992). A power primer. *Psychological bulletin*, 112(1), 155.
- Constantino, R. (2005). Print environments between high and low socioeconomic status communities. *Teacher Librarian*, 32(3), 22–25.

Intervention study to prevent 'summer reading loss'

- Cooper, H., Nye, B., Charlton, K., Lindsay, J., & Greathouse, S. (1996). The effects of summer vacation on achievement test scores: A narrative and meta-analytic review. *Review of Educational Research*, 66, 227–268.
- Delacre, M., Lakens, D., & Leys, C. (2017). Why Psychologists Should by Default Use Welch's t-test Instead of Student's t-test. *International Review of Social Psychology*, 30(1), 92–101.
- Downey, D. B., Von Hippel, P. T., & Broh, B. A. (2004). Are schools the great equalizer? Cognitive inequality during the summer months and the school year. *American Sociological Review*, 69(5), 613–635.
- Fälth, L., Gustafson, S., Kugelberg, E., & Nordström, T. (2017). LegiLexis formativa bedömningsverktyg-Testmanual. Retrieved from <https://legilexi.org/inspirationsbibliotek/legilexis-tester/testmanual/>
- Garner, J. K., & Bochna, C. R. (2004). Transfer of a listening comprehension strategy to independent reading in first-grade students. *Early Childhood Education Journal*, 32, 69–74.
- Gernsbacher, M. A., Varner, K. R., & Faust, M. E. (1990). Investigating differences in general comprehension skill. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 16(3), 430.
- Guthrie, J. T., Coddington, C. S., & Wigfield, A. (2009). Profiles of reading motivation among African American and Caucasian students. *Journal of Literacy Research*, 41(3), 317–353.
- Guthrie, J. T., & Humenick, N. M. (2004). Motivating Students to Read: Evidence for Classroom Practices that Increase Reading Motivation and Achievement. In P. McCardle & V. Chhabra (Eds.), *The voice of evidence in reading research* (pp. 329–354). Baltimore: Paul H Brookes Publishing Co.
- Hattie, J. (2012). *Visible Learning for Teachers: Maximizing Impact on Learning*. London; New York: Routledge.
- Kim, J. S., & Guryan, J. (2010). The efficacy of a voluntary summer book reading intervention for low-income Latino children from language minority families. *Journal of Educational Psychology*, 102(1), 20.
- Kim, J. S., & Quinn, D. M. (2013). The effects of summer reading on low-income children's literacy achievement from kindergarten to grade 8: A meta-analysis of classroom and home interventions. *Review of Educational Research*, 83(3), 386–431.
- Kim, J. S., & White, T. (2008). Scaffolding voluntary summer reading for children in grades 3 to 5: An experimental study. *Scientific Studies of Reading*, 12(1), 1–23.
- McCombs, J. S., Augustine, C. H., & Schwartz, H. L. (2011). *Making Summer Count: How Summer Programs can Boost Children's Learning*. California: Rand Corporation.
- McGill-Franzen, A. M., Lanford, C., & Adams, E. (2002). Learning to be literate: A comparison of five urban early childhood programs. *Journal of Educational Psychology*, 94(3), 443–464.
- Mol, S. E., & Bus, A. G. (2011). To read or not to read: a meta-analysis of print exposure from infancy to early adulthood. *Psychological Bulletin*, 137(2), 267.
- Nation, K., & Snowling, M. J. (2004). Beyond phonological skills: Broader language skills contribute to the development of reading. *Journal of Reading*, 27, 342–356.
- National Reading Panel (2000). *Teaching Children to Read: An Evidence-Based Assessment of the Scientific Research Literature on Reading and its Implications for Reading Instruction*. Washington, DC: U.S. Government Printing Office.
- Neuman, S. B., & Celano, D. (2001). Access to print in low-income and middle-income communities: An ecological study of four neighborhoods. *Reading Research Quarterly*, 36(1), 8–26.
- Reardon, S. F. (2011). The widening academic achievement gap between the rich and the poor: New evidence and possible explanations. *Whither Opportunity*, 91–116.
- Samuels, S. J., & Horowitz, R. (2017). The achievement gap in reading: Unique historical and future perspectives. In *The Achievement Gap in Reading* (pp. 23–42). London; New York: Routledge.
- Share, D. L., & Stanovich, K. E. (1995). Cognitive processes in early reading development: Accommodating individual differences into a model of acquisition. *Issues in Education*, 1(1), 1–57.
- Stahl, K. A. D. (2004). Proof, practice, and promise: Comprehension strategy instruction in the primary grades. *The Reading Teacher*, 57(7), 598–609.
- Stanovich, K. E., & West, R. F. (2000). Individual differences in reasoning: Implications for the rationality debate? *Behavioral and brain sciences*, 23(5), 645–665.