

**PUBLICATIONS OF
THE UNIVERSITY OF EASTERN FINLAND**

*Dissertations in Education,
Humanities, and Theology*



UNIVERSITY OF
EASTERN FINLAND

RIITTA SIKIÖ

**READING AND SPELLING SKILL DEVELOPMENT IN
ELEMENTARY SCHOOL: EFFECTS OF MINORITY
LANGUAGES AND PARENTAL HOME INVOLVEMENT**

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Publications of the University of Eastern Finland
Dissertations in Education, Humanities, and Theology
No 111

University of Eastern Finland
Savonlinna
2017

Grano Oy
Jyväskylä, 2017
Editor in-chief: Ulla Härkönen
Sales: University of Eastern Finland Library
ISBN: 978-952-61-2575-6 (print)
ISSNL: 1798-5625
ISSN: 1798-5625
ISBN: 978-952-61-2576-3 (PDF)
ISSN: 1798-5633 (PDF)

Sikiö, Riitta

Reading and spelling skill development in elementary school: Effects of minority languages and parental home involvement

University of Eastern Finland, 2017, 53 pages

Publications of the University of Eastern Finland

Dissertations in Education, Humanities, and Theology; 111

ISBN: 978-952-61-2575-6 (print)

ISSNL: 1798-5625

ISSN: 1798-5625

ISBN: 978-952-61-2576-3 (PDF)

ISSN: 1798-5633 (PDF)

ABSTRACT

This dissertation examines how language minority children, Finnish reading-risk children, and Finnish-speaking control children learn to read and write from first to second grade and in fourth grade. Further emphasis is on how attributions of the mothers of these groups affect their children's success in school and how teaching at home affects literacy skills. The influence of mothers' parenting styles and assistance with homework on children's reading and writing skills is also examined.

The research material consists of an ongoing study in which 2,052 children were studied since pre-school. The sample was recruited from four municipalities in Finland. The research project consisted of three sub-studies. The first sub-study investigated how language minority children, Finnish reading-risk children, and Finnish-speaking control group children learn to read and write from first to second grade. The data was analyzed using one-way ANOVA and repeated measures ANOVA. The findings showed that the Finnish-speaking control group children succeed the most, but were not significantly better than language minority children on any tests; however, they scored significantly higher than the reading-risk children in first and second grades in all tests. Language minority children and reading-risk children caught up with the Finnish-speaking control group children in second grade. The findings of this sub-study identify the relatively constant differences between these three groups, even if all these children had attended Finnish preschool.

The second sub-study examined differences between mothers' causal attribution and teaching time and the effects of these on children's literacy skills in a language minority group and in the Finnish-speaking control group. The second sub-study data were analyzed using the path model. The findings show that Finnish mothers attributed their children's ability more than language minority mothers. The findings show the importance of mothers' confidence in their children's ability. Having confidence in a child's own consideration – and, in this study, the child's ability and – will improve the child's perception of his/her own skills and self-confidence.

The aim of the third sub-study was to clarify to what extent language minority and Finnish-speaking control group mothers differ in parenting styles and maternal help with homework. Data were analyzed using the path model. The findings show that language minority mothers use psychological control more than Finnish mothers. The less language minority mothers help their children with homework, the more their children succeed on reading comprehension tests and decoding tests. The reason for more generous use of psychological control was the different cultural practices. It is

important to accept and understand children from different countries with different backgrounds and parenting styles. Currently, many different families and parenting styles are integrating into Finland.

The findings suggest that language minority children read and write well compared to the Finnish-speaking control group. This study shows that language minority children can learn Finnish well and are able to integrate into Finnish educational culture, that language minority children do not necessarily represent a high-risk group for learning Finnish, and that different languages alone are insufficient to classify children. Moreover, the risk for children's language learning lies in the attributions of the language minority parents and their culturally different parenting styles. Thus, it is also important to take language minority parents into account in discussions of integration into Finland. Without parental support and confidence in the Finnish educational system, children do not integrate into Finland by themselves. Therefore, all citizens should be treated as equal members of society.

***Keywords:** Reading, writing, reading difficulties, language minority children, parental attributions, parenting styles*

Sikiö, Riitta

Vanhempien rooli suomalaisten ja maahanmuuttajataustaisten oppilaiden lukemisen ja kirjoittamisen taitojen kehittämisessä

Itä-Suomen yliopisto, 2017, 53 sivua

Publications of the University of Eastern Finland

Dissertations in Education, Humanities, and Theology; 111

ISBN: 978-952-61-2575-6 (nid.)

ISSNL: 1798-5625

ISSN: 1798-5625

ISBN: 978-952-61-2576-3 (PDF)

ISSN: 1798-5633 (PDF)

TIIVISTELMÄ

Tässä väitöstutkimuksessa tarkasteltiin, miten oppilaiden luku- ja kirjoitustaito kehittyi ensimmäiseltä toiselle ja edelleen neljännellä luokalla erilaisissa oppilasryhmissä. Erityinen mielenkiinto tutkimuksessa kohdistui siihen, mikä rooli vanhempien kyvykomuksilla, kasvatustyyleillä ja kotitehtävissä auttamisella oli lasten luku- ja kirjoitustaidon kehittämisessä. Seurattavina olivat maahanmuuttajataustaiset lapset, suomalaisten lukemisvaikeuksien suhteen riskissä olevat lapset sekä heidän suomalaiset luokkatoverinsa. Tutkimusaineistona oli Jyväskylän yliopiston koordinoiman yhteistyössä Turun yliopiston ja Itä-Suomen yliopiston kanssa toteutetun Alkuportaatiin – tutkimushankkeen seuranta-aineisto. Hankkeessa on seurattu 2 052 lapsen kielellistä kehitystä ja oppimista esikouluikästä eteenpäin.

Väitöstutkimus koostuu kolmesta osatutkimuksesta. Ensimmäisessä osatutkimuksessa tarkasteltiin maahanmuuttajataustaisten lasten, suomalaisten lukemisvaikeuksien suhteen riskissä olevien lasten ja suomalaisten verrokkilasten luku- ja kirjoitustaidon oppimista ensimmäiseltä toiselle luokalle. Tutkimuksen analysointimenetelminä käytettiin yksisuuntaista varianssianalyysiä ja toistettujen mittausten varianssianalyysimenetelmää. Tämän osatutkimuksen tulosten mukaan suomalaiset verrokkilapset eivät olleet merkittävästi parempia kuin maahanmuuttajataustaiset lapset missään arvioiduissa taidoissa, mutta he menestyivät merkitsevästi paremmin kaikissa testeissä kuin lukemisvaikeuksien suhteen riskissä olevat lapset. Maahanmuuttajataustaiset lapset ja suomalaiset lukemisen riskilapset saavuttivat verrokkeja lukemisen ja kirjoittamisen taidoissa 2. luokalla suomalaista verrokkiryhmää. Tutkimus vahvisti tietoa lukemisen ja kirjoittamisen vaikeuksien suhteen riskissä olevien lasten hitaammasta taitojen kehityksestä. Toisaalta yllättävää oli se, että maahanmuuttajataustaisten lasten taidot kehittyivät yhtäläisesti suomalaisten verrokkien kanssa.

Toisessa osatutkimuksessa tarkasteltiin, miten vanhempien kyvykomukset ja kotitehtävissä auttaminen vaikuttavat 4. luokkalaisten maahanmuuttajataustaisten lasten ja suomalaisten verrokkilasten lukemisen ja kirjoittamisen taitoon. Osatutkimuksen analyysimenetelmänä käytettiin polkumallia. Tulokset osoittivat, että suomalaiset verrokkikäidit uskoivat maahanmuuttajataustaisten lasten äitejä enemmän lastensa koulumenestyksen johtuvan lapsen omista kyvyistä. Tutkimus osoittaa, että vanhempien usko lapsen kykyihin on yhteydessä hyvään lukemisen ja kirjoittamisen taitoon. Tulokset nostavat esiin erilaisista kieli- ja kulttuuriympäristöistä tulevien vanhempien uskomusten eroja.

Kolmas osatutkimus tarkasteli maahanmuuttajataustaisten ja suomalaisten verrokkilasten äitien kasvatustyylien ja kotona annetun kotitehtävätuen yhteyttä luku- ja kirjoitustaitoon neljännellä luokalla. Tutkimusaineiston analyysissä käytettiin polku-mallinnusta. Tulokset osoittavat ensinnäkin, että maahanmuuttajataustaiset äidit käyttivät kasvatustyylinään suomalaisia verrokkiäitejä enemmän psykologista kontrollia. Tutkimustulokset osoittivat myös, että mitä enemmän äidit auttoivat lapsiaan koti-tehtävissä, sitä huonommin heidän lapsensa menestyivät lukemisen ja kirjoittamisen testeissä. Suomeen on saapunut viime vuosina paljon maahanmuuttajia. Kulttuuristen eroavaisuuksien ymmärtäminen on nyt entistä tärkeämpää.

Tutkimus osoittaa, että maahanmuuttajalapset oppivat lukemaan ja kirjoittamaan hyvin verrattuna suomalaisiin verrokkilapsiin. Maahanmuuttajalapset pystyvät oppimaan suomea hyvin ja integroitumaan hyvin myös suomalaiseen kulttuuriin. Tutkimuksen avulla voidaan osoittaa, ettei maahanmuuttajalapset välttämättä edusta riskiryhmää ja ettei kieli varsinaisesti luokittele lapsia. Oppimisen riskiksi voi ennem-minkin nimetä vanhempien kykyuskomukset lapsistaan ja heidän käyttämänsä kulttuurisidonnaiset kasvatustyylinsä. Tutkimuksesta saatujen tietojen avulla on tärkeää, että myös maahanmuuttajataustaisten lasten vanhemmat otetaan huomioon lasten Suomeen kotouttamisessa. Ilman vanhempien tukea maahanmuuttajataustaiset lapset eivät voi täysin sulautua suomalaiseen kulttuuriin. Vanhempien tuki ja luottaminen suomalaiseen koulutusjärjestelmään on tärkeää.

***Avainsanat:** lukeminen, kirjoittaminen, lukemisen vaikeudet, maahanmuuttajataustaiset lapset, vanhempien kykyuskomukset, vanhempien kasvatustyylit*

LIST OF PUBLICATIONS

- I Sikiö, R., Siekkinen, M., & Holopainen, L. (2015). Literacy development among language minority background and dyslexic children in Finnish orthography context. *Reading Psychology, 37*(5), 706–727. doi.org/10.1080/02702711.2015.1105339.
- II Sikiö, R., Holopainen, L., Siekkinen, M., Silinskas, G., Lerkkanen, M.-K., & Nurmi, J.-E. (2016). Maternal literacy teaching, causal attribution and children's literacy skills in Finnish-speaking and language minority families. *International Journal of Educational Research, 77*, 99–108. doi.org/10.1016/j.ijer.2015.09.012.
- III Sikiö, R., Siekkinen, M., Holopainen, L., Silinskas, G., Lerkkanen, M.-K., & Nurmi, J.-E. (approved for publication). Maternal parenting styles, homework help, and children's literacy development in language minority and Finnish-speaking families. *European Journal of Psychology of Education, 1–16*. doi. 10.1007/s10212-017-0330-4.

The first and the second sub-studies are reprinted with the kind permission of the copyright holders. The third sub-study is approved for publication and will be published online in the fall of 2017.

The independent contribution of doctoral candidate in this doctoral thesis. This doctoral dissertation is a collection of an independent summary and three peer-reviewed research articles that have all been published as online articles. Riitta Sikiö is the main author in all three articles and has been in charge of constituting the data and the statistical analyses as well as formulating the research articles.

ACKNOWLEDGEMENTS

I would like to thank and pray for those who have supported me during these five years when I worked on this dissertation.

I wish to thank the supervisors of my doctoral thesis. My sincerest gratitude goes to my main supervisor Prof. Leena Holopainen who has tirelessly guided me throughout the whole process of writing this dissertation. I would also like to thank my second supervisor Dr. Martti Siekkinen for his warm and encouraging support.

I would like to thank the reviewers of this dissertation. I appreciate the time and expertise devoted by Prof. Kaisa Aunola and Dos. Elisa Poskiparta reviewing my thesis and for accepting the role of my opponent.

I would also like to thank the co-authors of the articles, Prof. Jari-Erik Nurmi, Prof. Marja-Kristiina Lerkkanen, and Dr. Gintautas Silinskas, for their technical support, emotional support, and professional comments. The special thanks go to Airi Hakkarainen and Kaisa Haverinen, who have taught me how to use the statistical programs and gave me a great deal of important advice during these years.

I had a wonderful opportunity to use the unique datasets from the First Steps studies. I would like to thank all those who have been working on these longitudinal datasets.

My very special thanks goes to my husband Tuomo and to our children Lauri and Marja who have encouraged me to complete this project and reminded me also to enjoy the important things in life outside the science world.

Parikkala, September 2017

Riitta Sikiö

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1 INTRODUCTION

The number of immigrants in Finland has significantly grown in recent decades, and change has been rapid as the number has increased, especially after the 1990s. The term immigrant is a generic term for the people who move to a new country. In the largest cities, over a half of the students can have an immigrant background (Ministry of Education and Culture publications, 2015, 10–15). Major immigrant groups in Finland speak Russian, Estonian, English, and Somali, but the largest groups of children (age 0–14 years) speak Somali and Arabic. Most immigrants in Finland live in Uusimaa, Varsinais-Suomi, and Pohjanmaa (Population Association, 2015.) According to Finnish educational legislation, education for immigrants aims to provide educational opportunities equal to those of Finns. Immigrant status is linked to a high risk of social exclusion (Madanipour, Shucksmith, & Talbot, 2015; Mannila, Reuter, 2009) and discrimination (Council of the European Union, 2004). In Finland, Russian speakers have been noted to be at particular risk of social exclusion. Culture and nature are quite similar in Finland and in the Russian Federation, but completely different languages hamper Russian people from integrating and learning Finnish, and, additionally, Russian people have a high tendency toward unemployment (Mannila & Reuter, 2009). The “Osaava ja luova” [skilled and creative] publication (Ministry of Education and Culture publications 2015, p. 15) mentions a number of objectives for the development of immigrant education, of which one goal is to ensure that all immigrant pupils have adequate support and conditions for success and integration into Finnish society and access to basic and upper secondary school studies. Sufficient literacy is one of the prerequisites for training and social attachment. However, in Finland, a longitudinal study of immigrant children and the development of reading and writing skills has not yet been conducted in Finnish language

The term language minority (LM) children has been used since the end of 1980s and was adopted first in English-language areas. When the spoken language at the home of a child or a student is other than English, the definition “language minority children” is justified (August & Hakuta, 1997; August & Shanahan 2006; Kieffer, 2008). In general, LM children speak another language at home than native children (Goodrich & Lonigan, 2016). Those children who do not use the same language as the native children have greater difficulties in learning than native speakers do (Goodrich & Lonigan, 2016; Yildirim, 2013). Despite the LM children’s lower academic achievement (e.g., Kieffer, 2008; Lesaux, Koda, Siegel, Shanahan, 2006; Lesaux, Rupp, & Siegel, 2007), the status of LM children does not necessarily place those children in a risk group for academic difficulties (Goodrich, et al., 2016). Language itself is also known as a social exclusion factor (Kulkarni & Sommer, 2015). Other factors, such as low-income status and growing up in poverty (DeNavas-Walt, Proctor, & Smith, 2013), are related to academic difficulties. In Finland, the term LM defines people who do not speak Finnish at home. According to national statistics, 5.7% of the population does not speak Finnish in Finland. The most common non-Finnish language in Finland is Russian (Population Association, 2014). In this dissertation, the phrase “LM children” is used to refer to children who speak other languages than Finnish in their homes.

Becoming literate, being able to read and write, is about achieving access to meaning from printed symbols. To get meaning from print, a child must learn the code used by each culture for representing speech with a series of visual symbols (Ziegler

& Goswami, 2006). Perfetti (1992) noted that spelling and reading are processes that share the same lexical representation.

The theoretical framework of the present study (Figure 1) is based on Bronfenbrenner's ecological theory (1979) highlighting the contextual factors that affect children's development via the proximal process (Bronfenbrenner & Morris, 1998). Bronfenbrenner's theory helps us understand the complex systems that affect children's learning, especially in a situation in which parents move the family to a new cultural environment. Two out of four systems (microsystem, mesosystem, exosystem, and the macrosystem) in ecological theory are the focus of this study: the macrosystem and microsystem.

The distal system of Bronfenbrenner's (1979) ecological theory, the macrosystem, consists of, e.g., different cultures, subcultures, and belief systems from the micro-, meso-, exo-, and macrosystem views, including the language culture in families and society. From the perspective of the macrosystem, models of behavior and parenting pass from one generation to another through the family (Bronfenbrenner, 1994). Moreover, the macrosystem in this study includes the Finnish educational system, especially the content of the Finnish curriculum, which is the main guide for teaching. The curriculum (Finnish National Agency for Education, 2004, p. 118; 2016, p. 133) is written so that Finnish language learning supports integration into Finnish society. A curriculum gives direction to teachers on how to teach different kinds of children. In addition to educational perspectives, the macrosystem view is also indicated by different cultural perspectives. LM children and their parents come to Finland from different cultural environments with different home languages. The effects of these cultural backgrounds are investigated in this study.

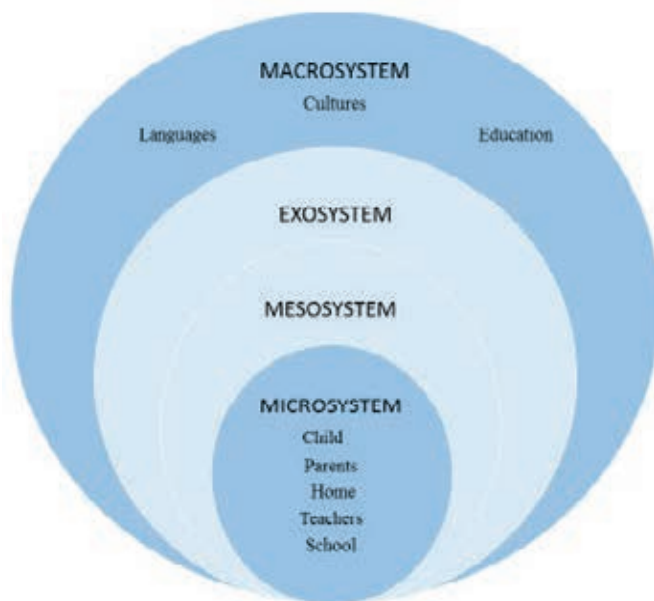


Figure 1. Theoretical framework of the study (Bronfenbrenner, 1979, modified).

The environment of the *microsystem* is a proximal process in which a child is at the center (Bronfenbrenner, 1979). A microsystem is a child's nearest environment, and it

includes the child's direct contacts. In the microsystem, contacts are direct, and interactions go to the child and from the child (Paquette & Ryan, 2001.) A child's biological development and the persons in his/her immediate environment, such as parents, peers, and teachers, affect his/her development and psychological growth (Bronfenbrenner, 1994, 39). In this dissertation, these microsystem interactions between the mother and child in the Finnish and LM context are studied, as a native language is spoken at home and a different language is learned at school (Yildirim, 2013). Parental involvement has been found to strongly affect children's academic skills (Prevoo et al., 2013). This is one important link between child, home, teachers, and school. According to the Bronfenbrenner theory (1979), a child's most important influence is the home, and the daily practices of the home create the foundation for the child's development.

1.1 LITERACY ACQUISITION

Learning to read and spell is important for academic learning and one of the most important targets in school. Reading and writing skills are among the key concepts in this study. The effects of different background variables on the reading and writing development of three groups: a Finnish reading-risk group, (RG), an language minority group (LM), and a Finnish-speaking control group (CG) from first to second and 4th grade, is studied.

Many studies have clearly demonstrated that the basic predictors of reading development are letter knowledge (e.g., Gallagher, Frith, & Snowling, 2000; Lerkkanen, Poikkeus, Ahonen, Siekkinen, Niemi, & Nurmi 2010; Lyytinen, Erskine, Tolvanen, Poikkeus, & Lyytinen, 2006; Torppa, Poikkeus, Laakso, Eklund, & Lyytinen, 2006; Wimmer, Mayringer, & Landerl, 1998) and phonological processing (Snowling, Gallagher, & Frith, 2003; Vellutino, Fletcher, Snowling, & Scanlon, 2004). The Simple View of Reading (SVR) is a commonly accepted reading theory in which Gough and Tunmer (1986) asserted that reading skills consist of two basic components: decoding and comprehension. Decoding refers to the ability to quickly and accurately read familiar and unfamiliar words in both lists and connected text that give access to adequate retrieval of information from the mental lexicon. This means that decoding is regarded as the retrieval of semantic information on the word level (Hoover & Gough, 1990). Moreover, reading comprehension consists of decoding and language comprehension: the ability to derive meaning from spoken words when they are part of sentences or other discourse (Gough & Tunmer, 1986). The SVR model has been supported in many orthographies, as well as in transparent orthographies (e.g., Braze, Katz, Magnuson, Mencl, Tabor, Van Dyke, Gong, Johns, & Shankweiler, 2016; Cadmine, Rodrigues, Santos, Viana, Chaves-Sousa, Ceu Cosme, & Ribeiro, 2017; Torppa, Georgiou, Lerkkanen, Niemi, Poikkeus, & Nurmi, 2016; Tunmer & Chapman, 2012). In this study, the measures used are based on SVR theory. Listening comprehension and phoneme awareness tests measure language comprehension skills, word-chain tests measure decoding, and reading comprehension is assessed with two tests (sentence and text comprehension).

Research has found that spelling acquisition depends on linguistic factors like word frequency (frequency effect) and lexical value (lexicality effect) (Wimmer & Mayringer, 2002). The lexicality effect refers to the observation of better performance for words than pseudowords (Defior, Justicia, & Martos, 1996; Wydell, Vuorinen, Helenius, & Salmelin, 2003).

1.1.1 Educational system in Finland

In Finland, basic education begins at age seven, and nine years of schooling are compulsory (Finnish National Agency for Education, 2004). By the age of six, Finnish children have had one pre-school (kindergarten) year, which has been obligatory since the year 2016 (Finnish National Agency for Education, 2016). Children attend kindergarten as part of day care centers (78%) or schools (22%). In Finnish kindergarten, instructions are integrated into thematic playing and learning (Ojala & Talts, 2007). Finnish kindergartens use a play-centered way and daily reading activities to promote children's linguistic skills before elementary school. Moreover, previous studies have shown that Finnish kindergarten teachers actively adapt their instructional practices according to the levels of pre-reading skills in the kindergarten class (Pakarinen, Lerkkanen, Poikkeus, Siekkinen, & Nurmi 2011). Practicing pre-reading skills provides a good foundation for children to learn to read and write (Lonigan, Burgess, & Anthony, 2000; Whitehurst & Lonigan, 1998). By the end of kindergarten year, 45% of children can read (Lyytinen, Erskinen, Hämäläinen, Torppa, & Ronimus, 2015).

The Finnish National Agency for education gives guidelines for teaching and learning methods, but the teachers decide how to implement these guidelines. According to Finnish national curricula (2004, 2016), learning is in all forms: active and goal-oriented, individual, and collective problem-solving learning processes. The bases and instruction of curricula and the recommended and instructed learning methods have strongly been based on the constructivist approach to learning. It is student-centered pedagogy that takes place in problem-solving situations in which a child's past experiences and knowledge are used to discover facts about and relationships to new knowledge (Rauste von Wright & von Wright, 1992). In first grade, reading and spelling are usually taught by way of alphabetic strategy. In this strategy, sound and symbol correspondences are important. It is typical to teach one letter sound correspondence a week. In that way, in approximately six months, all 21 Finnish letters and sounds are processed (Leppänen, Niemi, Aunola, & Nurmi, 2006). In the Finnish school system, writing and reading skills are taught for at least one hour every day. Although the teachers can choose their reading method and teaching material (Lerkkanen, 2007), the phoneme-grapheme correspondence method is mainly used, which is a natural choice for shallow orthographies.

1.1.2 Reading and spelling in different orthographies

Differences in orthographic consistency naturally affect teaching reading and spelling. Studies of reading acquisition conducted in various orthographies (Holopainen, Ahonen, & Lyytinen, 2002; Landerl, Wimmer, & Frith, 1997; Wimmer & Goswami, 1994) strongly confirm that in different orthographies children learning to read have to cope with the same task with different amounts of help from the system they are learning to decode. Languages vary greatly in the consistency of mapping between orthography and phonology, some of them being at the extreme ends of the shallow/deep continuum, which has led to the idea that cognitive architectures of skilled reading and learning to read in different orthographies might be different in quality, accompanying differences in reading strategies (Seymour, Erskine, & Aro, 2003; Moll et al., 2014).

The Finnish language is a strongly inclined, agglutinating language. In an agglutinating language, the ends of words are as if glued onto the body of the word. One

of the most specific features of the Finnish language is in morphological variations. Consonants and vowels can be long or short. Finnish is written with the Swedish variant of the Latin alphabet that includes the distinct character *ä*, and several characters (*b, c, f, q, w, x, z,* and *å*) reserved for words of non-Finnish origin. There are eight vowels whose lexical and grammatical role is highly important, and which are unusually strictly controlled, so that there is almost no allophony (Karlsson, 2008). Although Finnish is almost completely written as it is spoken, there are a few differences, and the main differences are that long vowels and consonants are represented by double occurrences of the relevant graphemes. This causes no confusion and permits these sounds to be written without having to nearly double the size of the alphabet to accommodate separate graphemes for long sounds (Karlsson, 2008). Due to the very shallow orthography, at the end of second grade, Finnish children usually read relatively fluently and accurately any word or pronounceable unit (Lyytinen, Erskine, Tolvanen, Torppa, Poikkeus, & Lyytinen, 2006).

Seymour et al. (2003) have studied 12 different European orthographies from the perspective of literacy acquisition, and they ranked these languages according to language orthography; from shallow to deep orthographies. Finnish and the other regular languages, such as Greek, Spanish, and Italian, were among the simple-structure languages. Danish, Scottish, English, and Dutch were the most complicated languages and were placed in the deep orthography group. Russian orthography has been said to be as deep as Danish. Russian orthography regulates the hierarchical relative regular rules that are complicated with numerous exceptions (Kerek & Niemi, 2009b.) Regular words and irregular words are pronounced differently (Kerek & Niemi, 2009.) Reading Russian has been found to be easier to learn than writing it (Grigorenko, 2003; Inshakova, 2004). Researchers have also found that learning Russian is not problem-free for even average Russian school children (Grigorenko & Inshakova, 2004; Kerek & Niemi, 2009).

Reading acquisition in orthographically irregular languages demands more effort and time to develop good reading skills. Therefore, deep orthographies require more time to read and write well than shallow orthography languages (McGuinness, 2004.) English children have trouble learning to read and write because of the irregular and complex reading system. For example, many graphemes consist of multiple letters (Ehri, Nunes, Willows, Schuster, Yaghoub-Zade, & Shanahan, 2001). In less transparent orthographies, like English and Russian, it is natural to use whole-word-oriented teaching methods or a mixture of phonics and whole-word methods (Aro, 2004; Kerek & Niemi, 2009).

Spelling differs from reading because it requires the production rather than the recognition of spelling patterns. Spelling is more complicated by the fact that there are often several possibilities to write a word phonologically, especially in less transparent orthographies (Wimmer & Landerl, 1997). Cross-language studies demonstrate that basic spelling skills are acquired faster in languages with a high degree of phoneme-grapheme consistency (Caravolas & Bruck, 1993). In this study, the participants were second graders and older; therefore, pseudoword spelling, which is more demanding than word spelling from a phonological point of view, was used.

Learning to read and write in different countries and orthographies is also affected by other factors than linguistic and educational ones, such as cultural and social aspects. Literacy-related activities in families vary between cultures (Aro, 2004), and the role of literacy skills in society also differs. Especially in developed societies, good reading skills are essential for successful school achievement, which, in turn, adds to

the possibilities for choices in secondary education and future careers (Brecker, Teoh, & Role, 2011; Hakkarainen, Holopainen, & Savolainen, 2016; Johnsson & Mortimer, 2011; McKoon & Ratcliff, 2016).

1.1.3 Problems in reading and spelling

The SVR theory has been used to explain and categorize different types of reading disabilities. It follows that there are three types of reading disabilities resulting from an inability to decode and an inability to comprehend (Gough & Tunmer, 1986). Children with reading difficulties most typically show difficulties in word recognition (Catts, Hogan, & Fey, 2003). Early risk factors for difficulties in decoding and reading comprehension difficulties are partially different (e.g., Bishop & Snowling, 2004; Catts et al., 2003, 2005; Muter, Hulme, Snowling, & Stevenson, 2004; Nation & Norbury, 2005; Oakhill, Cain, & Bryant, 2003). Poor knowledge of letters, phonological awareness, and letter naming speed predict difficulties in decoding at kindergarten age (Compton, Fuchs, Fuchs, & Bryant, 2006; Scarborough, Dobrich, & Hager, 1991; Snowling, Gallagher, & Frith, 2003). Moreover, especially in highly shallow orthographies, such as Finnish or German, slow naming speed has been asserted to be a good predictor of future word recognition problems (e.g., Georgiou, Aro, Liao, & Parrila, 2016; Holopainen et al., 2001; Kirby, Georgiou, Martinussen, & Parrila, 2010; Puolakanaho, Poikkeus, Ahonen, Tolvanen, & Lyytinen, 2004; Wimmer & Mayringer, 2002). Problems in reading comprehension are the results of decoding or oral language skill difficulties (Spencer, Quinn, & Wagner, 2014), or both reading comprehension and decoding discrepancies (Nation & Snowling, 1998).

One strong predictor is family risk for reading and writing disorders, generally named dyslexia (Dilnot, Hamilton, Mayhan, & Snowling, 2017; Eklund, 2017; Lyytinen, Aro, Holopainen, Leiwo, Lyytinen, & Tolvanen, 2006). Complex skills, such as reading, develop in the interplay between shared genetic and shared environmental factors (Rutter, Caspi, Ferguson, Horwood, Goodman, & Maughan, 2004), and both cognitive and environmental compensations are possible. Children from families in which several members have reading problems run a higher than normal risk of facing difficulties in learning to read (Gilger, Pennington, & DeFries, 1991; Snowling et al., 2003). In addition, children with a familial risk of dyslexia have been found to have a higher than normal incidence of difficulties in several language skills (Lyytinen, Aro, Eklund, et al., 2004; Lyytinen & Lyytinen, 2004; Snowling et al., 2003). In this study, the children at risk for dyslexia were one of the groups whose reading and spelling skill development was followed.

1.1.4 Literacy acquisition of LM children

Identifying the aspects that influence minority students' language acquisition in the early school years is important for aiding their literacy acquisition. The language skills that children come to school with may differ in systematic ways according to their language environments. Parental education and home literacy practices have been found to be particularly influential on children's language acquisition, especially their first (Hoff, 2013) and their second language vocabulary. An LM learner's academic achievements tend to lag behind those of their native peers in all content

areas (Gandara & Rumberger, 2002; August & Shanahan, 2006). It is also reported that for LM children it often takes a long time to develop their second language to the necessary level for successful participation in school (Cummins, 1981; Thomas & Collier, 2002). Droop and Verhoeven (2003) have found that second language learners had to learn and internalize various graphemic, semantic, and phonological nodes, and that there was significant difference in vocabulary knowledge between native and LM learners. The restricted vocabulary of LM learners possibly impedes their reading development in a second language.

Previous research has shown that bilingual children learning to read find it easier to read words of different orthographies that share the same alphabet, such as Spanish and English (Durunoglu, Nagy, & Hancin-Bhatt, 1993) or French and English (Comeau, Cormier, Grandmaison, & Lacroix, 1999). LM students, on the other hand, are faced with the challenge of learning a new reading and writing system that differs from their native system, and they have to cope with the effects of these differences on their learning (Perfetti, Liu, & Tan, 2002). Huennekens and Xu (2010) studied Spanish parents who read English storybooks to their four-year-old native Spanish-speaking children. After the seven-week intervention, the children's second language skills were improved, which highlights the importance of home literacy practices. In a study by Robers, Jurgens, and Burchinal (2005), three-to-five-year-old African American children's literacy skills were tested, and their mothers were interviewed. The results show that the home environment was a strong predictor of children's language skills. Moreover, book reading at home strongly correlated with the language acquisition of bilingual children.

Most of the research predicting the development of literacy acquisition and reading skills of LM students has been conducted with children in the primary grades who are learning in English, which has a deep orthography. Swanson, Lee, Orosco, and Lussier (2012) conducted a longitudinal study in which Spanish-speaking children learned to write and read English in the United States. They showed that native English speakers, children at reading risk and second language learners had similar cognitive difficulties (e.g., rapid naming, short-term memory), but in phonological processing the second language learners were the weakest. They pointed out that first language phonological processing and a working memory are important for second language literacy acquisition. Kieffer and Vukovic (2013) also studied the literacy acquisition of native English- and LM Spanish-speaking learners. They chose participants from similar low-income backgrounds and found that learning outcomes with native English learners and LM children were almost similar. They concluded that socioeconomic status and the education of parents had a greater influence on reading development than the first language of the children. Kieffer and Vukovic (2012) also studied Spanish LM learners, native English children at reading risk from both language groups from first to third grades. They found that LM learners who were from consistently lower socioeconomic status demonstrated growth trajectories in vocabulary, oral comprehension and letter-sound identification similar to their native English-speaking peers over the studied period. In terms of phonological awareness and working memory, LM learners' growth trajectories were slightly behind those of their English-speaking classmates, but significantly better than the reading-risk children.

Lesaux et al. (2006) studied Spanish-speaking children who were learning English as a second language. The LM children were on par with the native speakers in terms of reading comprehension skills; however, the components of literacy could not be fully acquired until the children acquired previous skills. That is, the children must

have good orthographic, decoding, and spelling skills, as well as good word recognition skills to achieve competency in reading comprehension. Some studies show that LM students tend to lag behind their native peers in many educational outcomes, especially when reading comprehension skills dominate the curriculum (Gandarara & Rumberger, 2002; Klinger, Artiles, & Barletta, 2006).

Kieffer (2011) monitored the progress in the English reading development of Spanish LM children and average native English-speaking children from kindergarten to eighth grade. The results show that the reading skills of LM learners who entered kindergarten with limited English proficiency were poorly developed compared to the average native English speakers. However, LM children who entered kindergarten with fluent English skills caught up with the native English speakers by the spring of the first grade.

1.2 PARENTAL HOME INVOLVEMENT

According to Bronfenbrenner's social-ecological system theory (1979), home and its daily practices strongly influence children. Children's biological development and the people in their immediate environment, such as their parents, affect their psychological growth and development (Bronfenbrenner, 1994). Parental involvement is a common term in educational research, and the word is used in many ways (Bakker & Denessen, 2007). Two clear and coherent concepts are home-based and school-based parental involvement strategies (Hill, Castellino, Lansford et al., 2004; Seginer, 2006). Home-based involvement refers to mothers' and fathers' support for and motivation of their children's learning (Epstein & Sanders, 2002; Seginer, 2006). This typically includes helping with homework and support in other academic-related activities (Hill et al., 2004; Seginer, 2006). School-based involvement consists usually of parents' activities at school to support their children's educational achievement, such as participating in parent-teacher conferences and school evenings (Seginer, 2006).

Interaction between parents and children is an important interpersonal context for children's school achievement and learning (Pianta, Nimez, & Bennett, 1997). Studies have shown the positive effects of general, supportive parental participation on their children's success in reading performance (e.g., Manolitsis, Georgiou, & Parrila, 2011; Pomerantz et al., 2007; Sénéchal & LeFevre, 2002; Torppa et al., 2006). Communication with children about school activities has been shown to positively affect children's academic performance (Castro et al., 2015), and parental help with homework has been shown to predict positive outcomes for children, including in relation to academic skills (Hill & Taylor, 2004; Pomerantz, Moorman, & Litwack, 2007) and social outcomes (Powell, Son, File, & San Juan, 2010).

The findings of home involvement are contradictory. Home involvement, like helping in homework, does not always affect a child positively and may matter more for some children than for others (Hill & Tyson, 2009; Silinskas, Niemi, Lerkkanen, & Nurmi, 2013). It has also been shown that the more parents helped with homework, the worse children performed in reading at school (e.g., Silinskas, Leppänen, Aunola, Parrila, & Nurmi, 2010). Parents react to their children's poor performance by increasing the time and frequency of help, and children who perform poorly ask more for help from their parents (Green, Walker, Hoover-Dempsey, & Sandler, 2007). Parents whose children are good at school have been found to help their children less than parents whose children exhibit poor reading skills (Ki & Soon, 2012; Silinskas et

al., 2013). Due to these different conclusions, the term parental involvement should be explained precisely in studies. In this study, parental involvement term involves mothers' homework helping in children reading and writing tasks.

1.2.1 Parental attributions and child literacy development

Motivated and task-oriented behavior is a basic element of fluent literacy skills (Aunola, Nurmi, Niemi, Lerkkanen, & Rasku-Puttonen, 2002). According to Widfield and Eccles (2000), motivation is built on four main elements. These elements are: cultural environment, parental beliefs and behavior, abilities of the child, and the child's early experiences of the same tasks. In Wigfield and Eccles' expected value theory, academic motivation is divided into two parts. The child's own achievement-related beliefs and expectancies and the values of the subjective tasks (Wigfield & Eccles, 2000; Wigfield & Combria, 2010). In the present study, goal of interest is in Wigfield and Eccles' modern motivation theory; especially in parental attribution.

Parenting is a multidimensional and complex process that actively integrates elements of self, family of origin, culture, socioeconomic status, and society (O'Brian, 2010). Causal attributions are the ways parents predict, explain, and evaluate their children's achievement (Miller, 1995). Attributions have been shown to influence parenting involvement and practices in children's activities, which influences children's development (Bugental & Happaney, 2002). Parental causal attribution theory is based on Weiner (1986) and his attributional theory of achievement motivation. According to Weiner's theory, causal attributions consist of three dimensions: *locus* shows if the success or failure has an internal or external dimension, *stability* shows if the factor is stable or unstable, and the *controllability* dimension shows if the individual is in control. According to this theory, attribution to a child's ability is in the internal and stable dimension, attribution to effort is in the internal, unstable, and controllable dimension. In contrast, task difficulty is external and uncontrollable and attribution to adult help is in the external dimension. (Weiner, 1986; Natale, 2007.)

Studies have investigated parental attributions and the effects of attributions on children's school achievement. Parental beliefs have been found to predict a child's school performance in the development of literacy skills (Aunola et al., 2002; Bouffart & Hill, 2005). Different attributes affect children's school performance in different ways (Natale, Aunola, & Nurmi, 2009). Natale et al. (2009) noticed that parental attributions of effort predict their children's failure and ability attributions their children's success in academic skills, both in kindergarten and in elementary school. Some studies have shown that parents typically attribute their children's good success to internal causes, such as ability and effort, and failure to external factors, such task difficulty. Parents use, in that way, "self-protective bias" (Himelstain, Graham, & Weiner, 1991; Miller, Manhal, & Mee, 1991.) On the other hand, as Yee and Eccles (1988) have suggested, parents attributed their children's failure in school performance to lack of effort. Leung and Shek (2014) have studied Chinese children 11–16 years of age and their parent's attribution to their success and failure in school. The study showed that the maternal attribution of a child's success and failure to effort affected maternal control over and sacrifice for the child's education.

Parental attributions may influence their expectations and aspirations affect their children's success together with the advice, support, and guidance that they give their children (Murphy, 1992). Not only parental attributes, but also the strength of the at-

tributes has been shown to impact school achievement. Rytönen, Aunola, and Nurmi (2005) have studied parental causal attributions effects on children's school achievement in kindergarten and elementary school. They noticed that parents attributed their children's success to teaching and ability in the kindergarten and elementary school. The greater achievement the children showed, the more the parents trusted to their children's ability and the less they trusted teaching.

Although there are some studies of parental attributions, there are only a few studies in the LM child context. Villiger, Wandeer, and Niggli (2014) have found that immigrant students report higher motivation than their native peers. They noticed that although immigrant parents had higher expectations on their child's reading achievements, they gave less emotional support to their children than native Swiss parents.

1.2.2 Parenting styles and literacy development

Parenting styles are the ways in which parents respond to and make demands of their children. Differences in parenting styles are largely based on a theory developed by Baumrind (1966). Parenting styles can be divided into three types: authoritative, authoritarian, and permissive. The authoritative parent attempts to direct her child's activities in a self-oriented and rational manner. She encourages in a verbal way, shares with the child the reasoning behind her policy. Both discipline and autonomous self-will are valued by the authoritative parent. The authoritative parent affirms the child's present qualities, but sets the standards and limits for future activities. She uses power, reason, and shaping by reinforcement and regime to achieve her objectives and does not base her decisions on group consensus or the individual child's hopes. (Baumrind, 1966). Authoritative parenting is characterized by affection and behavioral control, which has shown to be positively associated with children of various ages. Children's autonomy is encouraged, and reasoning is used to set limits on behavior (Baumrind, 1989; Hart et al., 2003; Maccoby & Martin, 1983). According to Barber (1996) and Barber, Stoltz, and Olsen (2005), authoritative parents are both affectionate and demanding.

The authoritarian parent attempts to control, shape, and evaluate the behavior and attitudes of her child in accordance with a standard of conduct—usually an absolute standard and formulated by a high authority. She values obedience as a virtue and uses punitive, forceful measures to curb the child's self-will. She believes in keeping in her child place and in restricting her autonomy. She does not encourage verbal give and take, believing that the child should accept her word for what is right and what is wrong (Baumrind, 1966). Authoritarian parenting is characterized as high behavioral and punitive psychological control (see Hart, Newell, & Olsen 2003), but low affection. Parents use physical coercion, verbal hostility, and other disciplinary strategies (Baumrind, 1989; Maccoby & Martin, 1983).

Permissive parenting is characterized by low behavioral control (Baumrind, 1989). Permissive parents are affectionate, but not demanding (Barber, 1996; Barber, Stolz et al., 2005). The permissive parent attempts to behave in an affirmative manner and shows a non-punitive acceptance of her child's desires, impulses, and actions. She consults with her child about policy decisions and makes few demands for orderly behavior and household responsibility. A permissive parent allows her child to regulate her own activities as much as possible, avoiding the exercise of

control and standards of parenting limits. A permissive parent also tends to use manipulation to achieve her/his own goals (Baumrind, 1966.)

Studies have shown that authoritative parenting has positive effects on both children's high school performance (Steinberg et al., 1989) and spelling skills in first and second grades (Karreman, van Tuijl, van Aken, & Dekovic, 2006; Kiuru et al., 2012; Wang, Chen, Chen, Cui, & Li, 2006). Mothers who are warm, nurturing, and responsive are more likely to develop positive and secure relationships with their children (Cox & Paley, 2003). Warm relationships support and encourage children's early autonomy and strengthen their academic and social functioning in early childhood (Landry, Smith, & Swank, 2006). Fletcher, Walls, Cook, Madison, and Bridges (2008) have reported that the highest levels of positive academic achievement are linked to authoritative parenting, while the highest levels of social problems in children are linked to authoritarian parenting.

Along with permissive, authoritarian, and disengaged parenting styles, non-authoritative parenting has negative effects on school success (e.g., Chen, Main, Zhou, Bunge, Lau, & Chu, 2014; Coley, Lewin-Bizan, & Carrano, 2011; Aunola & Nurmi, 2005). Some longitudinal studies have demonstrated a negative association between psychological control and self-esteem (Soenens, Elliot, Goossens, Vansteenkiste, Luyten, & Duriez, 2005). Studies have also demonstrated that parental psychological control is multiply determined by complex and reciprocally related social-contextual factors (e.g., marital conflict) (Buehler, Benson, & Gerald, 2006) and parental personality behavior (e.g., perfectionism) (Soenens et al., 2005; Soenens, Varnsteenkiste, & Luyten, 2010). However, it is notable that some parental expectations of obedience and use of strict discipline are deemed acceptable by their home culture in certain countries (Renzaho, Green, Mellor, & Swinburn, 2011). Different parenting styles also affect children's acculturation (Prady, Kiernan, Fairlay, & Wright, 2013) and integration into the classroom (Nguen, Chang, & Loh, 2014) and to the new home country and its culture. Mothers and fathers play different roles in parenting, and these roles differ in different countries (Newman, Gozu, Guan, Lee, Li, & Sasaki, 2015). In addition, parents with a higher socioeconomic background (SES) seem to demonstrate more developmental activities and use warmth in their parenting (Melhuish, Phan, Sylva, Sammons, Sira-Blatchford, & Taggart, 2008). Studies of parenting and its effect on boys and girls are under-represented. Mileva-Seitz et al. (2014) noticed that boys were more sensitive to different parenting styles than girls.

Extensive discussion has been conducted on the effect of parenting styles on children's social and cognitive development and success in school. Parenting styles refer to the common interactions of parents with their children and, therefore, the atmosphere of interaction between parent and child (Aunola & Nurmi, 2005; Darling & Steinberg, 1993). For example, authoritative and authoritarian parenting styles are linked to high academic achievement, but instead of rewarding positive behaviors, as authoritative parents do, authoritarian parents provide feedback in the form of punishment for misbehavior (e.g., Baumrind, 1989; Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994). Dornbusch, Ritter, and Steinberg (2001) have concluded that authoritarian parenting is not associated overall with positive adjustment and that authoritative parenting is not clearly associated with better academic achievement among all ethnic minority groups.

Parenting styles are also divided into warm/affectionate and demanding dimensions (Baumrind 1966). Parents who practice an affective and warm parenting style tend to demonstrate consistent acceptance when a child behaves well, and they

recognize their child's needs, emotions, and opinions. A demanding parenting style includes behavioral and psychological control. Parents who practice behaviorally controlling parenting attempt to control their child's behavior by setting high expectations and limits and maintaining strict discipline. A psychologically controlling parenting style involves controlling and manipulation a child's thoughts and emotions, e.g., using guilt and causing anxiety (Barber, 1996; Barber, Stoltz, & Olsen, 2005).

1.3 THE AIM OF THIS STUDY

The main focus of this study is to examine how LM children learn to read and spell in Finnish compared to native Finnish children and how parental-level sociocultural background variables affect the literacy skills of the children in these different groups. In addition, the effects of a child's gender and a mother's education are studied. This longitudinal study is needed to reinforce the knowledge about parental attributions, parenting styles, and teaching at home in different ethnic groups. This will help to foster more cooperation among parents and teachers.

1.3.1 The aim of study I

The aim of study I was to explore how development of reading and writing skills differs among the LM, Finnish reading-risk (RG), and Finnish-speaking control group (CG) from first to second grade. In addition, the study examined how the children's gender, age, home language, or parental educational background could explain the possible differences between the groups.

1.3.2 The aim of study II

The main research aim of study II was to clarify the relation between mothers' causal attributions, mother's teaching time, and the child's literacy skills in grade 4 in the group of LM families and the families of the Finnish-speaking CG. In addition, the effects of a child's gender and its mothers' educational background on the mothers' causal attributions and the mothers' teaching time were detected.

1.3.3 The aim of study III

The aim of study III was to determine the relationship between the parenting styles of LM and Finnish-speaking CG mothers, maternal help with homework, and a child's literacy skills in grade 4. In this study, the role of the child's gender and mother's educational background in parenting styles and homework help was also explored.

1.4 METHOD

1.4.1 Participants

The present study is part of an extensive follow-up study in which 2,052 (1,070 boys and 984 girls) children were studied from first to fourth grades (Lerkkanen, Niemi, Poikkeus, Poskiparta, Siekkinen, & Nurmi, 2006). The mean age of the children was 73.89 (3.52) months at the beginning of the study. The sample was recruited from four municipalities in Finland – two in central Finland (39 schools, 75 classes, 919 children), one in western Finland (26 schools, 55 classes, 750 children), and one in eastern Finland (16 schools, 32 classes, 399 children). All participating children surveyed were from municipalities related to this study, and they had studied at normal elementary schools. Moreover, all the children had attended one year in Finnish kindergarten at the age of six years before school entrance.

In study I, children were classified into one of three groups upon school entry: the LM group: non-native Finnish speakers with initial fluent Finnish proficiency; the reading-risk group: native Finnish speakers with risks of developing reading difficulties; and the control group: native Finnish speakers. In Studies II and III, children were classified into one of two groups: the LM group or the Finnish-speaking control group without reading risk.

The LM group was classified based on parental reports of a primary home language at school entry, at the age of seven. The LM group comprised 2.3% of the total number of children selected for the sample. They studied at normal schools and classes as their peers. This group consisted of 49 multilingual girls and boys. All had lived in Finland since kindergarten (age of six) and spoke a language other than Finnish at home. The primary home languages were English (16), Russian (9), German (4), Swedish (3), Albanian (3), Italian (2), Arabic (1), Chinese (1), Estonian (1), Hungarian (1), Persian (1), Portuguese (1), Serbian (1), Somali (1), Spanish (1), Thai (1), Turkish (1), and Vietnamese (1). Thirteen of the LM children had home languages that used a non-Latin alphabet.

The reading-risk group (RG) comprised 12.9% of the children. Children were selected for the RG group if they had one to three of the reading risks mentioned next: First, as part of an extensive questionnaire, both parents were asked whether they had experienced reading difficulties as a child. Second, the children's parents reported family-related reading risk. Third, when the children were tested in kindergarten, problems in phonology, letter naming, or rapid serial naming were found. Approximately 26% of the children in the RG group had a genetic risk for dyslexia and problems in one reading skill: phonology (8.3% of the risk group total), rapid serial naming (9%), or letter naming (8.3%). Furthermore, 12.5% of the RG children had both phonology and rapid naming problems, 37.5% had both phonology and letter naming problems and 6.9% had both letter naming and rapid naming problems. Some children (17.4%) had problems with all three skills: phonology, letter naming, and rapid naming. The RG group consisted of 266 children (185 boys and 81 girls). The Finnish-speaking CG consisted of the rest of the participants (84.6%), namely 1,737 Finnish-speaking girls and boys without reading or writing risks (858 boys 879 girls). Parents of CG children were also Finnish and the language they used at home was Finnish.

Parents were asked to provide written consent for their children's participation in this study. The vast majority of the children, 80%, came from nuclear families, 10% were from single-parent families, 8% from blended families, and 2% from families in which the parents were divorced and the child had two homes.

1.4.2 Procedure and measures

This ongoing research project began in 2006. Before the study, permission to conduct this study was requested from parents and teachers in written consent. The testers of this study were teacher education students or psychology students. Students were trained on the measures individually with senior researchers. All research assistants had a folder with necessary instructions. In study I, children’s skills were tested in the children’s own school in their own class as a group test in April 2008 and 2009 when they were in first and second grades. Each group test was 45 minutes. In Studies II and III, children’s skills were tested in April 2011 when they were in fourth grade. In Studies II and III, parents were also asked to fill questionnaires during the spring term 2011. Mothers responded well (95%), but the response rate of fathers was low (72%), which is why only the mothers’ answers were used in this study. Table 1 describes the measures used in different time points (first, second, and fourth grade spring) in each of the three studies (I, II, III). Specific descriptions with the reliability coefficients of each measure are presented in separate articles.

Table 1. Measures and Timetable of the study.

Measures	Timing			Studies		
	first Grade	second Grade	4th Grade	I	II	III
	Spring 2008	Spring 2009	Spring 2011			
Phoneme blending ¹	x			x		
Arithmetic reasoning ²	x			x		
Listening comprehension ³	x			x		
Spelling pseudowords ⁴	x	x	x	x	x	x
Reading comprehension sentences ⁵	x	x		x		
Word- chain test ⁶	x	x	x	x	x	x
Reading comprehension ⁷			x		x	
Reading comprehension ⁸			x			x
Mother’s teaching time ⁹			x		x	
Mother’s causal attributions ¹⁰			x		x	
Maternal help ¹¹			x			x
Parenting styles ¹²			x			x

¹ Phoneme blending (Poskiparta, 1995), ² Arithmetic reasoning test (Räsänen, Aunola, 2007), ³ The listening comprehension test (Kajamies, Poskiparta, Annevirta, Dufva, & Vauras, 2003), ⁴ Spelling pseudoword test (Lerikkanen, Poikkeus, & Ketonen, 2006), ⁵ Reading comprehension sentences test (Wagner, Torgesen, Rashotte, & Pearson, 1999), ⁶ Word- chain test (Nevala, & Lyytinen, 2000), ⁷ Reading comprehension test (Lindeman, 2000), ⁸ Reading comprehension test (Wagner, Torgesen, Rashotte, & Pearson, 2009, Finnish version Lerikkanen & Poikkeus, 2009) ⁹ Mother’s teaching time, questionnaire (Hood, Conlon, & Andrews, 2008), ¹⁰ Mother’s causal attributions, questionnaire (Natale, Aunola, & Nurmi, 2009), ¹¹ Maternal help, questionnaire (Silinskas, Niemi, Lerikkanen, & Nurmi, 2013), ¹² Parenting styles, questionnaire (Roberts, Block, & Block 1984).

Following the dimensions of the SVR model (Gough & Tunmer, 1986) decoding, reading comprehension, listening comprehension, and phonological tests were measured in this study. Decoding was tested with a word-chain test (Nevala & Lyytinen, 2000). This task was a time-limited test with 10 rows. There were –6 words written together without any space between them. The children read silently the words comprising the chains and then noted the word boundaries by drawing a dividing line between the words.

Reading comprehension skills were tested with two different measures. In the reading comprehension test (Lindeman, 2000), the children read a fiction story and then answer 11 multiple-choice questions, and one question in which they have to arrange five statements in the correct sequence based on the information gathered from the text. Testing time is 45 minutes. In the reading comprehension sentences test (Wagner, Torgesen, Rashotte, & Pearson, 1999, Finnish version by Lerkkanen, Poikkeus, & Ketonen, 2006) and the reading comprehension test (Wagner, Torgesen, Rashotte, & Pearson, Finnish version Lerkkanen, & Poikkeus, 2009), children read the story and then choose whether the statement is true or false by circling the correct option. The child has three minutes to respond to 60 alternatives.

The listening comprehension test (Kajamies, Poskiparta, Annevirta, Dufva, & Vauras, 2003) included a story about a wild stallion. The tester reads the story twice, and, after that, the child answers to six questions, one by one, by choosing the correct picture of four possible corresponding answers by marking a cross in the corner of a picture.

Phoneme awareness was assessed with a phoneme blending test (Poskiparta, 1995). The tester reads the word phoneme by phoneme once, and the child must choose the correct correspondence of the word presented with four alternative pictures.

Spelling was assessed using a task with eight items consisting of one-, three-, and four-syllable pseudowords from the ARMI reading test battery (Lerkkanen, Poikkeus, & Ketonen, 2006).

An arithmetic reasoning test (Räsänen & Aunola, 2007) was used to measure basic mathematical reasoning skills without language elements. The task was presented to the child, as indicated in the horizontal integer calculations. The child was asked to solve as many tasks as possible within a three-minute timeframe. The child was asked to alternate an addition and a subtraction problem.

Four different measurements were used to examine parental involvement in school work and parenting styles at home.

- 1) A “teaching time” mean score was calculated in this study in accordance with the Hood, Connon, and Andrews (2008) and Silinskas, Lerkkanen, Toivanen, Niemi, Poikkeus, and Nurmi (2012) test patterns. It describes the frequency that mothers spent on literacy activities with their children.
- 2) “Mother’s causal attributions” in success situations were tested by two questions based on the study by Natale et al. (2009). Mothers were asked to report their causal attributions concerning their children’s success and progress at school in the child’s fourth grade. Mother’s attributions for their children’s success and progress at school were presented, with four options for the attributions: “The child is talented” (ability), “The child tries hard” (effort), “The tasks have been easy for the child” (easy task), or, “The adult has helped with the homework.”
- 3) “Mothers’ help with homework” describes how much a mother helps a child with their homework. The mean scores were calculated by three questions of

the Silinskas, Niemi, Lerkkanen, and Nurmi (2013) test pattern, and it describes how much a mother helps her child with his/her homework.

- 4) "Parenting styles" was based on Block's Child-Rearing Practices Report (CRPR; Roberts, Block, & Block 1984, Finnish version by Aunola & Nurmi, 2005). Three dimensions of parenting were identified: warmth, behavioral control and psychological control.

1.4.3 Statistical analyses

The normal distribution of all measures was tested. Phoneme blending, listening comprehension, arithmetic reasoning, and reading and spelling variables had fairly normal distribution. Reading and spelling measures in study I were standardized. The research questions in study I were: 1) Are there differences among the three groups—children at risk of developing reading problems (RG), LM children, and the CG—in basic skills other than reading and writing, namely, phonological awareness, arithmetic skills, and listening comprehension skills? 2) How do the reading and writing skills differ among the LM, RG, and CG groups when controlling for children's gender, age, and home language, and parents' educational background? 3.) Does the development of reading and writing skills differ among the LM, RG, and CG groups from first to second grades? To answer the first and second research questions in study I, one-way ANOVA (SPSS version 21) was used. Dunnett's test was used as a post-hoc test to correct the overall error rate. The third research question was answered using repeated measures ANOVA. Time (reading and spelling symptoms at times 1–2) was a within-subject factor and the three groups (CG, LM, and RG) as a between-subjects factor. In study I, children's gender and home language and parent's educational background were used as the covariate variables. The effect size was calculated by Cohen's *d* measurement (Grissom & Kim, 2005) using the means and standard deviations of all three groups.

Study II research questions were: 1) Do mothers in an LM group and mothers in the majority population differ in respect to their causal attributions concerning their children's success, named decoding, reading comprehension, and pseudoword spelling tests in a school context and the amount of maternal literacy teaching? 2) To what extent do maternal causal attributions and maternal literacy teachings relate to children's school success, named decoding, reading comprehension and pseudo word spelling test within the groups of language minority and majority populations? Study III's research questions were: 1) To what extent do LM and majority population (MP) mothers differ in their parenting styles and homework help? To what extent do the relations of maternal parenting styles and help with homework on children's literacy skills (named decoding, reading comprehension, and pseudoword spelling) differ between the LM and MP groups? 2) To what extent do the child's gender and mother's education influence the association between maternal parenting styles, maternal help with homework, and children's literacy skills (named decoding, reading comprehension, and pseudoword spelling)? In Studies II and III, the first research questions were answered by using an independent samples t-test (SPSS, version 21). In this test, the mean-level comparisons of variables were set to the SPSS program to determine the statistical differences ($p < .05$) between these two groups. Studies II and III the research questions were analyzed using the path model (Mplus program, version 7.11, Muthen & Muthen, 2012) for two groups, the Finnish CG and LM group. According to the idea of the path model, the models were built using selected theory.

Path model can explain the correlations and causal explanations with independent and dependent variables. Moreover, path modelling in the Mplus program can take into account latent variables. The model can show the direct and indirect effects of one variable on another, and these direct and indirect effects, in turn, on a third variable (Metsämuuronen, 2008).

In Studies II and III, the interest was on the effects of mothers' causal attributions and parenting styles to children's literacy skills through parental home involvement. The dependent variables were regressed free on one independent variable (mother's involvement at home). Next, independent variables (study II mothers' causal attribution and study III parenting styles) were added and specified to the model. Then, the association of all attributions and parenting styles among literacy skills were specified. Finally, the indirect effects of each of the attributions or parenting styles via mothers' teaching time or mothers' help with homework were estimated. Moreover, the background variables (child's gender and mother's education) were used as a moderator in study II. These variables were added to the model one at a time to predict mothers' attribution, teaching time, and/or reading and writing skills. In study III there were different paths for girls and boys. Parenting styles, mother's help with homework, reading and writing skills, and mother's education variables were added to model one at a time. In the final model, all non-significant paths were fixed at zero with the help of the p-values ($p < .05$).

For all the models, goodness-of-fit was evaluated using five indicators: The χ^2 , the comparative fit index (CFI), the Tucker-Lewis Index (TLI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMSR). According to Hu and Bentler (1999), non-significant χ^2 test, TLI, and CFI values are above 0.95, RMSEA values below 0.06, and SRMSR values close to 0.08 can be considered indicators of a good model fit to the data.

1.4.4 Reliability, validity, and limitations of the study

The challenges of achieving reliability and validity are among the most difficult faced by researchers. The reliability of the research refers to the reproducibility of the study. High reliability improves test repeatability, and variables with high reliability scores give less random results (Cook & Campbell, 1979). In Studies I, II, and III, the consistency reliability of the sum-variables was confirmed using Cronbach's alpha-coefficients. The alpha-scores of the variables were quite high (.70–.87). Only in the sum-variable pseudoword spelling was the reliability coefficient moderate (.65). In Studies I, II and III, the stability reliability was taken into account by choosing the group tests and questionnaires that were possible to do again with a new group anywhere, at any time. Stability also improved in this study because the test times were always at the same time every spring.

Validity is categorized into two main types of validity: external validity and internal validity (Huitt, 1998). Validity tells the extent to which a device measures what it is intended or purports to measure (Abbott & McKinney, 2013). External validity describes whether the results of the study are generalizable. A sample should represent the general population as well as possible (Nummenmaa, 2009). The sample of Finnish children in this study represents well the age group because of the large sample of children ($N = 2,056$ children and their mothers) from four municipalities around Finland. In Studies II and III, the sample of Finnish children was reduced

by selecting randomly the third part of the Finnish control group (N= 368) by taking into account the children's gender. Using the sample size N between the LM and CG groups the comparison were more reliable of these groups in Mplus program. Moreover, the Finnish reading-risk group (N= 266) was representative if the incidence of reading difficulties is around 10–15% of school children. The sample of the LM group (N =49) corresponds well to the true number of immigrants during 2006–2011 in Finland (2.3%), but as the number of LM children in many countries is much higher, any generalization of the results must be made with caution.

Internal validity refers to the rigor with which the study was conducted (e.g., the study's design, the care taken in conducting measurements, and decisions concerning what was and was not measured). Internal validity also shows which effects detected in a study are truly caused by the treatment or exposure in the study sample, rather than being due to other biasing effects of extraneous variables (Metsämuuronen, 2002). Internal validity describes the scope of the theory of the study (Heikkilä, 2008).

Construct validity refers to whether the operational definition of a variable actually reflects the true theoretical meaning of a concept. In this study, commonly used Finnish literacy and arithmetic tests were used. These tests have good validity for assessing children's skills in early grades. Parents answered questionnaires that were pre-tested one year before the study. The LM children's mothers might have had some difficulties in answering the questionnaires, but the researchers helped them.

Children's literacy skills were tested every spring at the same time, in April. The questionnaires were also sent to and filled in by the parents at the same time every year. The sample of missing values increased because some children moved to other municipalities. The proportions of missing data variables, the "missing values analysis" (MVA) was used by SPSS in studies II and III to confirm the validity of study. The missing value was random in study II (Little's MCAR test in CG: $\chi^2=95.50$, $df=75$, $p=.055$, Little's MCAR test in LM: $\chi^2=57.19$, $df=54$, $p=.357$), and study III (Little's MCAR test in LM: $\chi^2 = 42.56$, $df = 48$, $p = .695$; Little's MCAR test in CG: $\chi^2 = 92.62$, $df = 86$, $p = .293$). In studies II and III, the missing value increased because the mothers' answer rate was lower than the number of children's literacy tests. When the missing values are random, the Mplus program used the pairwise method (Muthén & Muthén, 2012). Random error must be taken into account in this study by checking the values of children by cross checking the coding and double-checking the children of three (study I) and two (studies II and III) groups. One child represented only one group. LM children were picked and checked manually from the data. If answers to questions about home languages were unclear, the case was omitted from the study.

The data collection also had several limitations. First, the main aim of the research project was not to study immigrants or LM children. Therefore, some parents might not have wanted to participate the study if they did not consider it important. On the other hand, all immigrant parents who participated the study were helped in completing the consent form and questionnaires as much as necessary. Second, the sample of LM children was quite small, but also heterogeneous. There were 18 different home languages, which enabled a broad view of different languages but, on the other hand, ruled out any comparison. In addition, the sample does not represent a group of school-aged immigrant children in Finland, where Somalia and Arabic speaking children are the most common foreign language speaking groups. Third, it was unfortunate that only a sufficient number of mothers answered the questionnaires and that the rate of fathers who answered the questionnaires was so low. Fourth, the questionnaires did not contain open questions, which would have given more information about parenting

and attributions. On the other hand, open questions could have reduced the response percentage. It would have been important to interview the parents on their parental involvement, causal attributions, and parenting styles. By collecting information about the differences between different cultures the information about parenting involvement would have been more specific. Fifth, different analyses could have been used. In study II, using the multigroup method would have made it possible to compare the differences of the groups. In study III, executing separate correlations for girls and boys would have increased the information of the effects of mothers' parenting styles. In study III, using regression analyses separately for all variables and testing the effect of gender using an interaction term might have been possible.

1.4.5 Ethical aspects of the study

The Finnish Advisory Board of Research Integrity (2012) divides the ethical principles of research into three dimensions: The first part is respect for self-determination and consent to the research. The purpose and the use of a study must be clear to the participants. The research should be shown as useful and enabling the creation of new knowledge (Creswell, 2009). The researchers went to the kindergartens and schools involved in this study to inform them about the study in the spring of 2006. The kindergarten teachers and their directors, teachers, and headmasters were present at the information sessions.

All teachers, parents, and children were asked to become involved in the study. The principals or school directors decided whether they wanted to participate in the study. Parents and children were asked to participate in the study in questionnaires in the spring of 2007. Kindergarten teachers sent the research consent form home to the students and returned them collectively to research coordinators. If there were too few answers, the kindergarten teachers were asked to send the consent forms again. Because of immigrants' low answer activity, they were sent a simpler text version of the consent form. All the tests used in this study were executed by graduate students, and the tests were shown to the children during a normal school day. All participants also had permission to interrupt their involvement in the study at any time.

In accordance with the Finnish Advisory Board of Research Integrity (2012), all activities were designed to guarantee the participants' anonymity and the principle of data protection. The data were protected confidentially so that only the researchers could see children's, parents', or teachers' answers. The data material was stored safely in locked cabinets in locked rooms. There were two main research directors/professors involved in this research project. In addition to them, there were one to two responsible researcher coordinators in every research town. These research directors and coordinators participated in the study by collecting data, by instructing the students in the testing methods, and by coordinating the research. The research directors and coordinators gave the data to the researchers by electronic means, i.e., with a memory stick if only data were needed in the study. The electronic data were divided into different parts with the children's ID code, and, at this point, the participants' names were known only by the two main directors of the research project. In this way, privacy could be maintained, and researchers could not recognize any children in the study. For this doctoral research, all LM children were collected as one group from all the data. Doctoral students collected (spring 2012) children using the language spoken at home as a criterion.

2 SUMMARY OF THE RESULTS

2.1 STUDY I: LITERACY DEVELOPMENT AMONG LM BACKGROUND AND DYSLEXIC CHILDREN IN THE FINNISH ORTHOGRAPHY CONTEXT

The main findings of study I indicate that the reading and writing skills of the Finnish CG children were not significantly better than those of the LM children in any of the tests used; however, the CG children performed significantly better than the reading-risk children in the word-chain test in first grade ($p=.000$, Cohen's $d = 0.64$), and second grade ($p=.000$, Cohen's $d = 0.63$). In addition, in the reading comprehension test, the CG had better skills than the reading-risk group in both grades (the first and second grade $p=.000$, Cohen's $d = 0.95$). Moreover, in reading comprehension skills, LM children were significantly better than the reading-risk children in first grade ($p=.000$, Cohen's $d = 0.75$) and second grade ($p=.000$, Cohen's $d = 0.63$).

In the pseudoword spelling test, the CG performed significantly better than reading-risk group in first grade ($p = .002$, Cohen's $d = 0.96$) and in second grade ($p = .000$, Cohen's $d = 0.82$). LM children were better than the reading-risk children in first grade ($p=.000$, Cohen's $d = 0.65$) and second grade ($p=.000$, Cohen's $d = 0.45$). Finnish CG children were significantly better than RG children in all tests, but although the LM group children obtained lower test scores than the Finnish CG, the differences between these groups were not significant. LM group children were significantly better than RG children in reading comprehension and pseudo word tests in both grades. As shown in Figure 2, the trend in the development of spelling skills showed that LM children and reading-risk children caught up with the Finnish CG children in second grade (Figure 2).

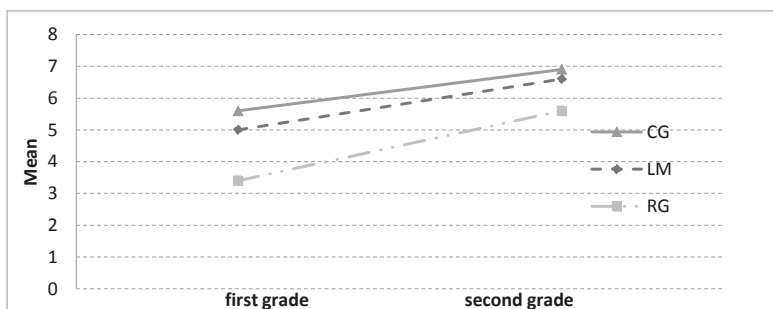


Figure 2. Mean score in the pseudoword spelling test for Finnish-speaking CG, LM, and RG in first and second grades.

Children's age, language, or parental education did not significantly affect reading and writing skills. Children's gender was the only background variable that affected the pseudoword spelling test. Three background variables (in first grade) confirmed these findings.

2.2 STUDY II: MATERNAL CAUSAL ATTRIBUTIONS, LITERACY TEACHING TIME, AND CHILDREN'S LITERACY SKILLS IN FINNISH-SPEAKING AND LM FAMILIES

Study II explored first whether Finnish-speaking mothers attributed their children's school success to internal literacy abilities. The result show that Finnish-speaking mothers attributed their children's success and progress to their children's own ability significantly more than LM mothers. Moreover, the more Finnish mothers trusted their children's ability, the better they did in literacy tests (Figure 3).

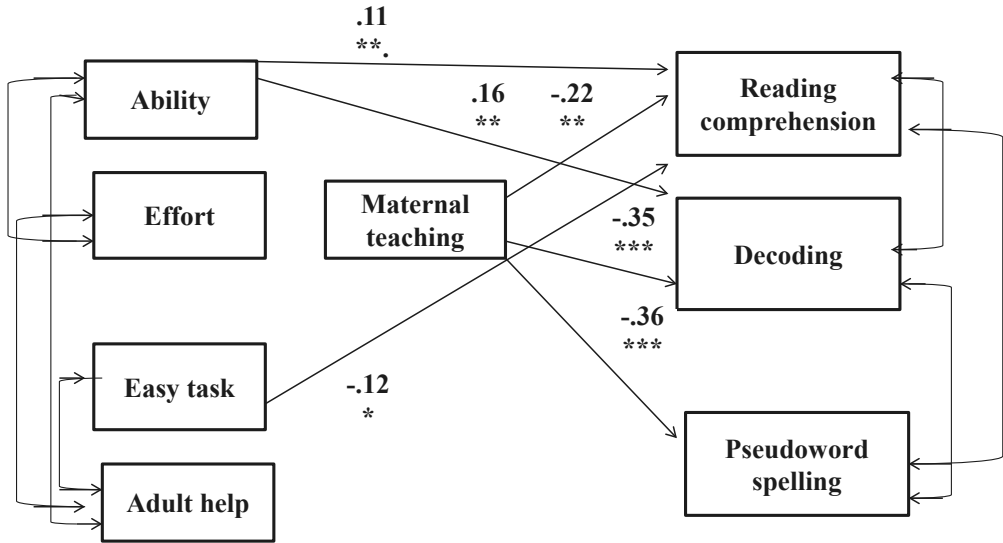


Figure 3. The standardized estimates for the Finnish-speaking CG model of maternal attributions, maternal teaching, and reading and spelling skills. Note * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Ability and effort .21**, easy task and adult help .24***, effort and adult help .15***, ability and adult help .23***, reading comprehension and decoding .26*, decoding and pseudoword spelling .14*, reading comprehension and pseudoword spelling .15*

Further, although the differences are not statistically significant, it can be shown that the less Finnish mothers attributed their children's success to easy tasks, the better the children did in the reading comprehension test. LM mothers attributed their children's success and progress to adult help. The more the LM mothers attributed their own help, the more they taught their children. While not statistically significant, the less Finnish mothers taught their children, the better their children succeed in reading tests. In contrast, LM mothers' teaching time did affect their children's literacy skills (Figure 4). LM mothers attributed more to external explanations for their children's literacy success in school than Finnish mothers.

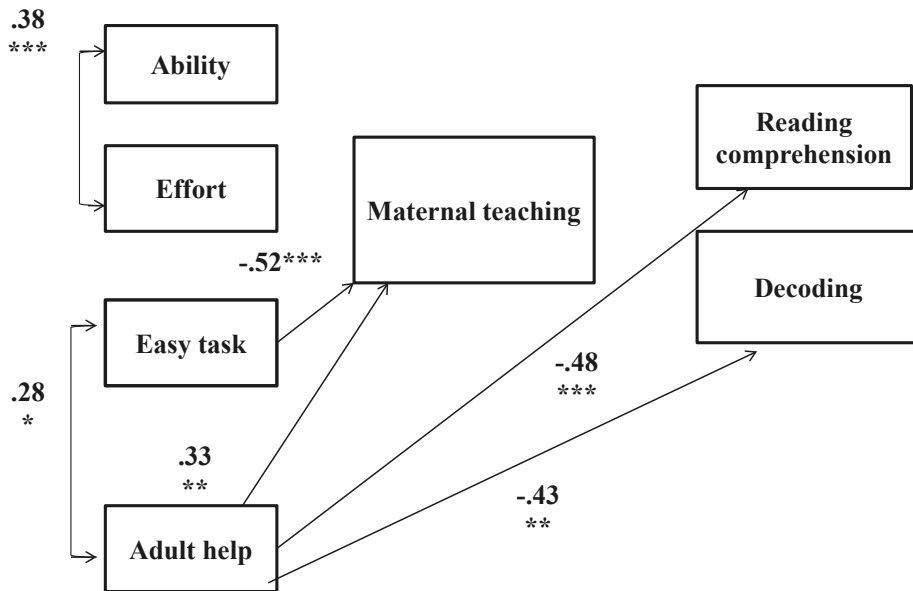


Figure 4. The standardized estimates for the LM model of maternal attributions, maternal teaching, and spelling skills. Note * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

2.3 STUDY III: MATERNAL PARENTING STYLES, HOMEWORK HELP, AND CHILDREN'S LITERACY DEVELOPMENT IN LM AND FINNISH-SPEAKING FAMILIES

In study III, the findings show that LM mothers use psychological control more often than Finnish mothers. In addition, the LM mothers' behavioral parenting styles positively affected their daughters' reading comprehension and decoding skills through maternal homework help, whereas the mothers' psychological control negatively affected literacy skills through the maternal help. The less LM mothers helped their children with homework, the better the children did in reading comprehension and decoding tests (Figure 5).

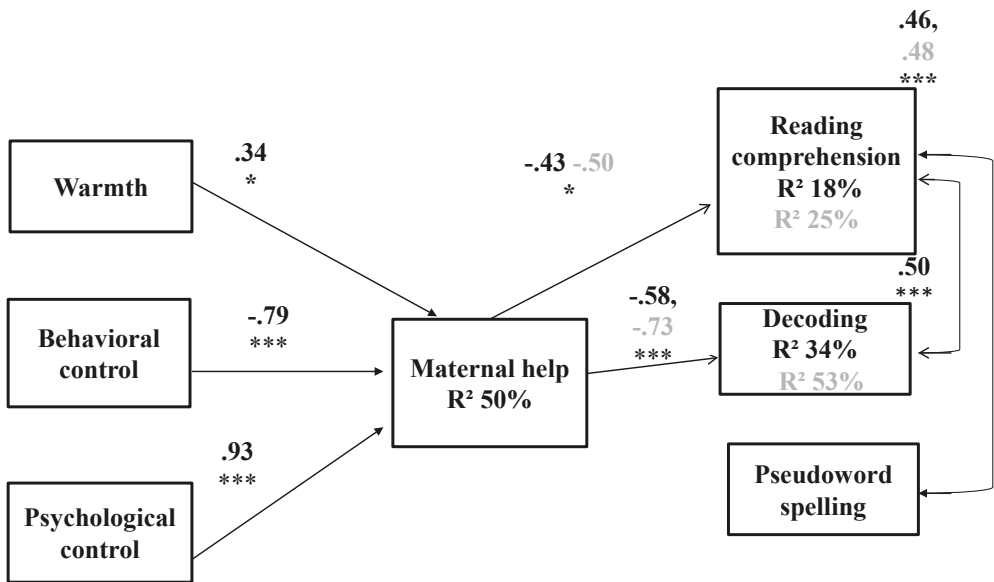


Figure 5. The standardized estimates for the LM group girls (black) and boys (grey): model of mothers' parenting styles, maternal help, and children's reading and spelling skills. Note * $p < .05$, ** $p < .01$, *** $p < .001$.

Finnish-speaking mothers' parenting styles did not significantly affect their children's literacy skills (Figure 6). Moreover, the less the mothers helped their children, the better the children did in reading comprehension and decoding tests. A mother's level of education inversely affected homework help. The more highly educated the mothers were, the less they helped their daughters.

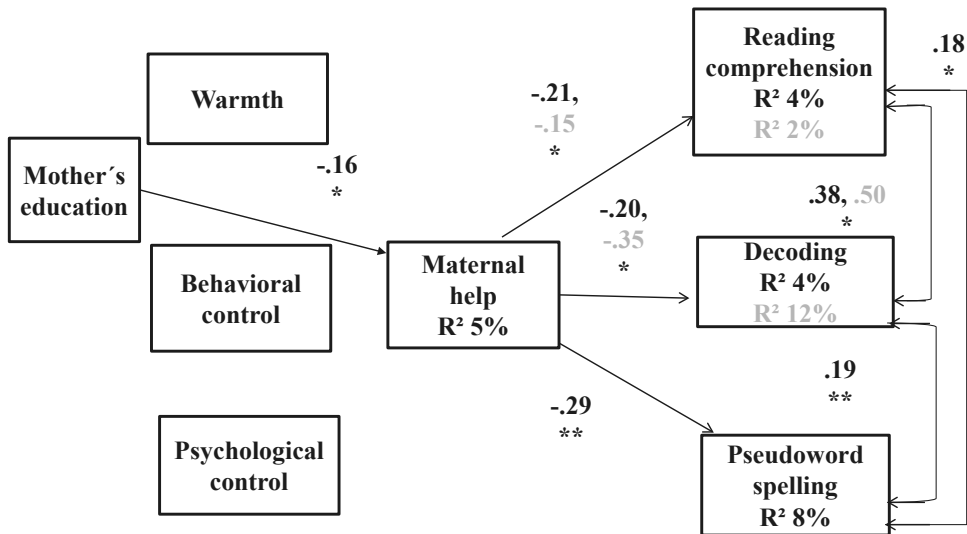


Figure 6. The standardized estimates for the Finnish-speaking CG group girls (black) and boys (grey): model of mothers' parenting styles, maternal help, and reading and spelling skills. Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

3 DISCUSSION

In this chapter, the research findings are generally discussed from the perspective of a modified Bronfenbrenner theory (Figure 1), especially by means of the micro- and macro-systems in the model. A specific discussion of the findings from each study can be found in each separate article.

The main objective of this study was to examine how LM children learn to read and write Finnish compared to their Finnish-speaking peers and how mothers' causal attributions, parenting styles, teaching time at home and homework help, and some background variables (gender, language, and mother's socioeconomic status) affect children's reading and spelling skills in different groups. In all the studies, a comparison between the LM group and the Finnish-speaking CG was executed. In study I, the reading-risk group was added. The discussion begins from the macrosystem level (languages, cultures, and education). Then, the discussion continues to the microsystem level with a focus on parents, home, and teaching.

3.1 LEARNING TO READ AND WRITE FINNISH

According to the SVR model (Gough & Tunmer, 1986), reading skills include decoding and reading comprehension skills, and reading comprehension is connected to a broader language comprehension skill. In this study, the Finnish reading (decoding and reading comprehension) and pseudoword spelling skills of LM children from first to second and fourth grades developed about the same way as the Finnish control group, but better than the reading-risk group. The reasons for these findings are discussed from educational, orthographical, and reading-risk perspectives.

In this study, all children had attended Finnish kindergarten, which forms a base for good Finnish language and literacy skills, as well as for LM children (see also Kiefer, 2011). Kindergarten enables children to improve their basic skills of phonology, reading, and writing by systematic teaching methods (Pakarinen et al., 2011). These oral language proficiencies (Nation & Snowling, 2004), good decoding, orthographic, and spelling skills (Lesaux et al., 2006) influence later reading skills. In this way, linguistic and pre-reading practices in kindergarten (Lonigan et al., 2000; Whitehurst & Lonigan, 1998) build up a strong basis for learning to decode. Systematic phonics-based teaching methods and transparent orthography enable the majority of children to learn to read and write relatively fast after one school year (Aro & Wimmer, 2003; Holopainen et al., 2001; Leppänen et al., 2006; Torppa, Georgiou, Salmi, Eklund, & Lyytinen, 2012). Moreover, good decoding skills are essential for good reading comprehension skills (Tunmer & Chapman, 2012). In addition, vocabulary and listening comprehension skills are important determinants for reading comprehension in many studies (Hagtvet, 2003; Hoover & Gough, 1990; Lerkkanen, Rasku-Puttonen, Aunola, & Nurmi, 2004; Oakhill & Yuill, 1996, Roch & Levorato, 2011).

The LM children in this study spoke 18 different languages. Thirteen of 49 of the children's home languages were written using an alphabet system different from the Latin one. From the perspective of orthographic consistency, half of the LM children's written home languages have deep orthographies, like English and Russian. In this study, children who had English as their home language (16 children) belonged to the

children who performed below average compared to the whole group in the phoneme blending task, and children who had Russian as their home language (nine children) performed below average in the decoding test in first and second grades. For an LM student, learning a new reading and writing system that contrasts with their native system can be a challenge. It is also interesting to know how these contrasting features of reading and writing works within learning languages (Perfetti, et al., 2002). In this study, students just starting to learn to read Finnish could have been helped to overcome this contrast. Finnish has one of the most transparent orthographies (Seymour et al., 2003), and this also might lower the challenge to learning to read and spell the language.

There is consensus that the etiology of reading ability and disability is multifactorial (e.g., Pennington, 2001) with genetic factors influencing environmental factors. In study I, the children who had family risks for problems in learning to read at kindergarten age were significantly weaker than other LM and CG children in all literacy tests at the end of second grade. Previous studies have shown that children with family reading risks show poorer performance on numerous language and literacy skills at different ages than their counterparts without these risks (Snowling, Muter, & Carroll, 2007; Torppa et al., 2010). These risks for reading problems are not only genetic, but also environmental and motivational factors affect reading and spelling development. It has previously been shown that variation in the learning environment at home, shared reading in particular (Torppa et al., 2007), and in children's motivation (Onatsu-Arvilommi, Nurmi, & Aunola, 2002), are linked to language and literacy skills. In study I, we have shown that LM children, as such, are not at a similar risk for reading and spelling problems as children with family reading risks.

3.2 THE ROLE OF PARENTS IN LITERACY DEVELOPMENT

Home and its daily practices influence children. Individuals in a child's immediate environment affect the child's psychological growth and development (Bronfenbrenner, 1994). Mothers and fathers support their children's learning (Epstein & Sanders, 2002) and promote motivating children's learning (Seginer, 2006). Variant and abundant reading in early ages is an effective key to learning to read (Morrow, Roskos, & Gambrell, 2015). In particular, home instruction, cognitive and language activities, and home involvement in early childhood predict overall child readiness (Lau, Li, & Rao, 2011) for school and affect children's school success (Castro et al., 2015).

Home involvement in children's school work typically means helping with homework and supporting other academic-related activities (Hill et al., 2004; Seginer, 2006). In sub- studies II and III, home involvement (maternal teaching and mothers' help with homework) was negatively connected to children's literacy skills. Findings show that both LM and CG mothers taught their children, but there was no positive effect on reading or writing skills (see Green et al., 2007; Leung et al., 2014). It might be that mothers' help or teaching time was insufficient to improve children's skills, or they did not know how to help their children in a new culture (Bronfenbrenner, 1979), or they did not have the skills to help their child in literacy acquisition (Bakker & Denessen, 2007). Home involvement may matter more for some children than for others, and it does not always have a positive effect (Pomerantz et al., 2007; Silinskas, et al., 2013).

Comparing several studies (e.g., Gandara & Rumberger, 2002; Kieffer, 2011), the mothers of the LM children in this study had at least the same educational level as the Finnish mothers. Different socioeconomic status and incomes of families seem

to affect the role of home involvement. Highly educated mothers expect more from their children (Halle, Kur-Kostes, & Mahoney, 1997; Wang & Deng, 2016) than lower income mothers do (Benner & Mistry, 2007; Crosnoe, Mistry, & Elder, 2002) or poorly educated parents (Bronfenrenner & Morris, 1998). In addition, low-income parents tend to be less involved in their children's education (Camaho- Thompson, Gillen-O'Neel, Gonzales, & Fuligni, 2016).

3.2.1 Effects of causal attributions on children's literacy skills

The role of parental causal attributions on their children's academic achievement has proven to be strong (Enlund, 2016; Natale, 2007; Natale et al., 2009). The beliefs of parents also predict their children's performance, especially the development of literacy skills (Aunola et al., 2002; Bouffart & Hill, 2005.) Their attributions have also been found to affect parenting practices in children's activities, which influences children's development (Bugental & Happaney, 2002). Study II has shown that Finnish speaking mothers' and LM mothers' causal attributions and homework help differed. The more the mothers trusted their children's own abilities, the less they helped them, and the better scores their children received. Finnish-speaking mothers explained their children's success, such as the school tasks being easy, less than LM mothers. These results are related to the Weiner's (1986) attribution theory about internal and external dimensions of attributions. Internal attributions have more positive effects than external attributions on children's school success. Children's success in school increased the parents' confidence in their children's ability which, in turn, decreased teaching at home (Green et al., 2007; Rytönen et al. 2005). It might be generally true that Finnish parents more than LM parents easily have confidence in Finnish teachers and instruction at school because they have more knowledge of the school system. These findings show the importance of confidence in a child's own thinking and progress. Having confidence in a child's own skills—and in this study, the child's ability and progress—will improve the child's perception of his/her own skills and self-confidence. LM children live between two (or more) cultures. They live in Finland, but are probably not fully integrated into the Finnish culture. Cultural or linguistic differences may form conflicts between parents and their child. Often children are integrated into a new culture and its system easier than their older parents, which may confuse parents (Bronfenbrenner, 1979).

3.2.2 Parenting styles and children's literacy development

Different parenting styles affect children's acculturation (Prady et al., 2013). In this study, several differences could be found between LM mothers' and Finnish-speaking mothers' parenting styles; LM mothers used more psychological control than Finnish mothers did. Although there is no one way to parent a child, parenting style with hard control and high warmth is associated with healthy and balanced child development (Darling & Steinberg, 1993; Joussemet, Vitaro, Barker, Côté, Nagin, Zoccolillo, & Tremblay, 2008). The effects of psychological control through homework help negatively influenced the LM daughters' reading skills. This result of the negative effects of psychological control are consistent with previous studies (Aunola & Nurmi, 2005; Chen, Liu, & Li 2000; Chen et al., 2014; Coley et al., 2011; Ginsburg & Bronstein, 1993). Mothers play different roles in parenting in different countries. For instance, psy-

chological control is a norm in Asia (Pomeranz & Wang, 2009). In addition, in Asian countries, parents may use discipline, demand obedience, have high expectations, and strictly monitor their children's behavior (Renzaho et al., 2011). In the latest wave of immigrants in 2015, more than 30,000 immigrants came to Finland, which means that a variety of different cultures, family, and parenting styles are being integrated into Finnish society. It can be hypothesized that these cultural differences will affect not only education (Nguen et al., 2014), but also the whole country and its culture.

It has been shown that a behavioral parenting style and a warm parenting style have a positive effect on reading skills. A warm relationship between a mother and her child supports and encourages the child and has a positive effect on the child's academic skills (Landry et al., 2006.) In addition, the positive effects of authoritative parenting styles have been shown to affect children's spelling skills (Kiuru et al., 2012) and general academic achievement in earlier studies (Baumrind, 1989; Fletcher et al., 2008; Hart et al., 2003; Maccoby & Martin, 1983; Steinberg et al., 1989).

3.3 CONCLUSIONS AND FUTURE STUDIES

The findings of this study show that the best results in literacy tasks were achieved in a situation in which the parenting style was behavioral, paired with having confidence in and encouraging a child's abilities. In Bronfenbrenner's theory, the role of the macrosystem is very important in children's development. Children's environment, such as parents, their education, attributions, and parenting styles, affect children's school success. For immigrants and language minority families, the new home country can offer poor or at least a limited learning environment, even an unwillingness to learn a new language. Immigrant children run a high risk of social exclusion from Finnish culture (Mannila & Reuter, 2009; Madanipour, Shucksmith, & Talbot, 2015). Therefore, all immigrants should integrate into the Finnish school system as early as possible. The better they integrate, the better they become a full member of Finnish culture. Integration into a new home country relies on a willingness to make contacts and learn its cultural characteristics in contrast to preserving one's own culture and avoiding the host culture (Yijälä & Jasinska-Lahti, 2010). In this study, the LM children seemed to be integrated quite well into the Finnish school system, which was reflected as success on reading and writing tests. All these LM children had attended Finnish kindergarten before the school in which they practiced pre-reading skills. Good Finnish pre-skills helped the LM children to learn Finnish and its culture. It often takes a long time for LM individuals to develop good second language skills for successful participation in society (Cummins, 2003; Thomas & Collier, 2002). LM children must learn a new orthography with a new reading and writing system that may differ from their own native language system (Perfetti et al., 2002). Many studies have shown that LM children tend to lag behind their native peers in educational outcomes, especially when the tasks include reading comprehension (Gandarara & Rumberger, 2002; Klingner et al., 2006). In this study, it was kept in mind that all the children's mothers were relatively highly educated. Highly educated parents provide highly qualified childhood education (Harding, Morris, & Hughes, 2015) and have better potential to strengthen their children's belief in their own skills (Rytkönen et al., 2005). On the other hand, home involvement, parental attributions, and parenting styles seem to be different, but their role in academic achievement was found to be very weak, partly due to the small group of LM children.

Natale et al. (2009) investigated the effects of Finnish parents' causal attributions to their children's success in kindergarten and first grade in school. Their results showed that the more parent attributed their children's ability, the better the children succeed in school, whereas the more parents attributed their children's success to effort, the poorer their children performed. Parents have also been found to attribute their children's better success to internal causes and, in contrast, failures to external causes. Parents use a "self-protective bias" (Himmelstain et al., 1991; Miller et al., 1991.) This study showed that attributions to children's own ability and mother's behavioral parenting styles affect children's literacy skills in a positive way (see also Landry et al., 2006). Finnish mothers had more confidence in their children's abilities. The explanation for this could be confidence in the Finnish school system and its teachers (Lerikkanen, Kikas, Pakarinen, Poikonen, & Nurmi, 2013). When parents have confidence, students also have confidence in the relationships between educational professionals and parents (Shelden, Angell, Stoner, & Roseland, 2010). Children's success in school increased parental attribution to the children's ability and, in that way, reduced attributions to teaching (Green et al., 2007; Rytönen et al., 2005). Mothers' psychological control as a parenting style is accepted and well-respected, at least in Asia (Chao & Kanatsu 2008; Kim & Hong, 2007). Because hard discipline is a part of their culture, the children have adapted to it (Pomeranz & Wang, 2009). Different parenting styles alone do not explain the whole truth behind children's development of academic skills. But knowledge of different sociocultural backgrounds opens the door to an acceptance of differences.

It would be interesting to continue similar research with an expanded immigrant group or in another language context. It would be useful to do the same kind of research in southern Europe, or in Asia, or in an area in which Finnish children form the LM group.

3.4 PRACTICAL IMPLICATIONS

Migration has dramatically increased worldwide as well as in Finland. The main reasons for migration are unemployment, persecution, religious reasons, or refugee status (Population Association, 2015). Last year (2015), 6.2% of the people in Finland were not Finnish (Maahanmuuttajat ja kotouttaminen [Immigrants and their integration], 2016). Research into different topics is needed to create practical solutions, e.g., in education. Knowledge of different cultures helps and enables teachers to achieve more accurate and humane multicultural education (Timonen & Kantelinen, 2013). The results of the multicultural learning environment project, MOKU (Ruhanen, 2011), expanded teaching methods for immigrant children and knowledge of cultural information about the different partners, such as parents and teachers. The results of the present study provide additional information to projects like MOKU about the role of parents in academic achievement. In this study, the LM children had attended Finnish kindergarten at least one year before primary education. It has been shown that LM children can catch up with peers if they attend kindergarten in their new home country (Kieffer, 2008). To better ensure a child's healthy growth, educational development (Park, 2014), and welfare (Poteet, 2014), it is important to integrate families together in their new home country. By taking into account the whole family in connection with immigration, the immigrant families feel as though they are a part of their new home country and its society, and, in this manner, they become involved in their integration into their new home country (Poteet, 2014).

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ARTICLES

ARTICLE I

Sikiö, R., Siekkinen, M., & Holopainen, L. (2015). Literacy development among language minority background and dyslexic children in Finnish orthography context. *Reading Psychology, 37*(5), 706–727.

doi.org/10.1080/02702711.2015.1105339.

ARTICLE II

Sikiö, R., Holopainen, L., Siekkinen, M., Silinskas, G., Lerkkanen, M.-K., & Nurmi, J.-E. (2016). Maternal literacy teaching, causal attribution and children's literacy skills in Finnish- speaking and language minority families. *International Journal of Educational Research, 77*, 99–108.

doi.org/10.1016/j.ijer.2015.09.012.

ARTICLE III

Sikiö, R., Siekkinen, M., Holopainen, L., Silinskas, G., Lerkkanen, M.-K., & Nurmi, J.-E. (approved for publication). Maternal parenting styles, homework help, and children's literacy development in language minority and Finnish-speaking families. *European Journal of Psychology of Education, 1–16*.

[doi. 10.1007/s10212-017-0330-4](https://doi.org/10.1007/s10212-017-0330-4).

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RIITTA SIKIÖ

In recent decades the number of language minority children has significantly grown also in Finland due to the global situation. One challenge for language minority children is to learn to speak, read and write a new language. The co-operation between teachers and parents is essential in this work.

This study examines how language minority children learn to read and spell Finnish compared to their native Finnish peers, and how parental-level sociocultural background variables affect this process. Parental-level variables used in this study are parental attributions, parenting styles, and teaching at home.



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**PUBLICATIONS OF
THE UNIVERSITY OF EASTERN FINLAND**
Dissertations in Education, Humanities, and Theology

ISBN 978-952-61-2575-6
ISSN 1798-5625