Applying Existing Reading Research:

To Improve English Reading Comprehension in Icelandic Secondary Schools

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Lokaverkefni til M.Ed.-prófs

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Preface

This study originally began as an interest in exploring how peer learning partners might help improve reading comprehension for adolescent English language learners. Over time, interest progressively grew from the secondary-levels of educational settings to elementary-levels. After my own discovery process, I found out a lot about the specific components needed for reading comprehension to take place. Much research by others has influenced and steered my focus, which continues to evolve. While trying to understand the reading difficulties adolescents face when comprehension is a constant struggle, my understanding progressed from understanding essential primary language components for early readers, through first and second language learning processes, and finally, to understanding language as a tool for organizing language, learning, and abstract concepts. Adults and educators have the potential to provide a bridge for scaffolding the transitioning of learner understanding in contextual situations to decontextualized environments. This enables learners to develop higher-order functioning for learning, thinking, and understanding when learning is devoid of context-embedded communication. Thus, adults can provide or withhold these opportunities for cognitive growth, as Hamers & Blanc (2000) stated:

> The cognitive function of language refers to a general psychological process by which the child appropriates language as an organiser of knowledge . . . [and] The extent to which adults, in their interactions with a child, manipulate language in problem-solving enables him to develop language in this function to a greater or lesser degree. (pp. 117-118)

Thus, language as a socially developing occurrence enables humans to advance communicatively and intellectually. As a language is without semiotic writing systems with which to convey written forms of communication, so too are language systems without humans involved in social interaction.

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Abstract

Applying Existing Reading Research to Improve English Reading Comprehension in Icelandic Secondary Schools

The purpose of this thesis was to examine research on collaborative reading models, the learning of strategies for improving reading comprehension for secondary students of English as a second or foreign language (hereafter referred to as the L2), and to provide intervention measures that target struggling readers before remedial recommendations become necessary. The particular focus draws from research of both native-speaking English language (L1) learners and L2 learners. Few studies are available of L2 upper secondary language learners using these models and approaches. However, studies of the essential reading components needed for literacy and reading comprehension among L1 learners may provide useful help for struggling L2 readers to increase their reading comprehension of English academic texts.

This thesis is a formative exploratory literature review within the framework of cognitive linguistics, and builds on the research of others. The aim was to inform my own practice and educators in Iceland. This study draws on research from cognitive theories for second language learning. People are social beings, and literacy development begins with collaborative social exchanges amongst humans. Therefore, collaborative language learning and strategy learning may be effective ways for improving reading comprehension for adolescent learners.

Furthermore, the study explored the mastering of primary language components necessary for reading in an Alphabetic Writing System, because research indicates that some adolescents struggling with reading comprehension may suffer from insufficient component skills related to reading. These component skill prerequisites are the *alphabetic principle* and *alphabetics*, which include the *phonological* components—*phonetics* and *phonemics*, and *phonics*, in addition to word-level and sentence-level reading *fluency*. I refer to secondary aspects affecting reading comprehension, which take time to learn, such as background and vocabulary knowledge, strategy instruction, and cognitive development, because research gives promising, positive, to strong effects on general learning and language achievement, and reading comprehension.

Consequently, this study found that research indicates promising and positive effects on reading comprehension improvement when learners receive instruction for using collaborative learning models and strategies, with most components of L2 learning.

Key terms: *automaticity, alphabetic principle, alphabetics, literacy, deciphering, decoding*, *fluency, metacognition, metalinguistic, phonemic awareness, phonics, phonology, reading, strategy instruction, zone of proximal development*

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1 Introduction

1.1 Background

Adolescents in many English-speaking countries have reading difficulties, especially in terms of reading comprehension. This has been shown, for example in the US. I seek to show, using native English language learner (L1) and second language learner (L2) reading research that the solutions found to be effective in these contexts may apply to the English language-learning situation in Iceland. I will accomplish this by reviewing the main research from the fields of L1 and L2 reading instruction, and show how this applies to the Icelandic L2 language-learning context. I begin with defining essential terms; stating the research question and the purpose of this literature review thesis; and describing why particular focus is given to the detection of remedial component skills affecting adolescent reading comprehension. Further, I describe why educators need a deeper understanding of aspects related to reading comprehension and suggest the use of valid diagnostics and assessments to measure elements related to reading comprehension.

Research shows a large percentage of adolescent learners in the US, Iceland, and other countries, either complete secondary school with low grades or dropout of school because they are poor readers and cannot maintain the high demands of secondary-levels of reading. Studies indicate that 75% of students struggling with reading after the third grade continue to have reading difficulties in the ninth grade (Berman & Biancarosa, 2005; Peterson et al., 2000), while others proposed that if learners are struggling with reading skills by the end of third grade, they will continue to struggle for the rest of their lives (Wren, 2001). Biancarosa and Snow (2006) posited that the eight million school age children who read below grade-level, and the 70% of older adolescents who struggle with some form of remedial reading, do not suffer from difficulties with reading words. Rather, their common problem lies in reading comprehension difficulties. Additionally, research indicates that a small percentage of 15-year-old native Icelandic language students struggle with reading comprehension in their L1 (Mennta- og menningarmálaráðuneyti, 2014 Júni; OECD Organisation for Economic Cooperation and Development, 2012). However, as this thesis will show, L1 reading proficiency directly influences L2 reading potential competence.

The thesis is divided into eight chapters. Chapter 1 begins with an introduction of the main purpose of this study, which includes reasoning for the study, definitions of major terminology, the literature reviewed, and the research goal and question. Chapter 2 provides a foundation of the background and justification for the study, reasoning as to why a focus on adolescent reading comprehension merits improvement, and finally, explains why it is necessary that educators are more acutely aware of the various aspects involved in reading comprehension. Chapter 3 explores research of Icelandic adolescent learners, and explains why this present study should focus on improving their reading comprehension. Chapter 4 introduces the fundamental component skills needed for reading to take place and includes a more detailed exploration of fundamental component skills, which include the theoretical reasoning behind phonics instruction, as opposed to whole language instruction. Chapter 5 explores various reading comprehension strategies that proficient readers employ before, during, and after reading. Chapter 6 concludes with an examination of the theoretical reasoning of the importance of child and adolescent cognitive development, which entails a gradual shift from context-embedded, situational interaction with others, to decontextualized, context-reduced environments, communication, and understanding, and the significance of learning in social settings. Chapter 7 includes a discussion of the consensus of literature review drawn from the significant professionals and researchers relevant to cognitive psychology, child and adolescent development, linguistics, and reading, remedial and special education. Finally, chapter 8 concludes with an overview of this study and proposes suggestions for improving L2 adolescent reading comprehension.

1.2 Literacy proficiency and the L1-L2 link

Adolescent literacy proficiency is essential for individual future social and economic success (Cummins, 2011; Mennta- og menningarmálaráðuneyti, 2014; Rayner, Foorman, Perfetti, Pesetsky, & Seidenberg, 2001; Thürmann, Vollmer, & Pieper, 2010). For many, lacking literacy skills may result in the inability to complete secondary school, enter into institutions for advance studies, and compete for the "nearly two-thirds of new jobs in this decade [which] will require some postsecondary education" (Berman & Biancarosa, 2005, p. 1; Mennta- og Menningarmálaráðuneyti, 2014, Júni; Musset, P. & Valle, R. C., 2013; OECD, 2012, January; Peterson, Caverly, Nicholson, O'Neal, & Cusenbary, 2000). More often than not, skilled jobs require high demands for some form of literacy (Biancarosa & Snow, 2006, p. 1; Kamil, 2003, p. ii). To be successful

in education and basic cognitive functions in life, competency in literacy skills becomes a necessity. It is an indispensable key, which enables opportunities for self-improvement and economic advancement (Rayner et al., 2001; Slavin, Cheung, Groff, & Lake, 2008b; Thürmann et al., 2010; Wren, 2001). Based on scores from the Program for International Student Assessment (PISA) in 2000, Arnadóttir and Kristmundsson (2004) reported that 45% of the Icelandic 15-year-olds tested in their L1 would have difficulty securing employment that required reading, if the same standards were required in Iceland as in some other nations (as cited in Berman, 2010). A recent study focused on addressing issues related to the increasing school dropout rates and suggesting areas for improvement, which indicated that there are many who do not complete higher-level studies, and that many of them will experience difficulties gaining employment that requires literacy abilities (Musset & Valle, 2013).

Recent reports indicate that Icelandic adolescents are facing difficulties with a declining rate of completing secondary education (Mennta- og menningarmálaráðuneyti, 2014). Studies identified a rapid five–year rise of adolescents who either dropped out of school or have not completed secondary school after having been enrolled for six years (Mennta- og menningarmálaráðuneyti, 2014; Musset & Valle, 2013; OECD, 2012). From the year 2007 to 2013, reports show that of 1,124 secondary school students enrolled in the general education track, 70% had not completed school; and 55% enrolled in the career track had not graduated six years later (Mennta- og menningarmálaráðuneyti, 2014, pp. 18-19; Alþingi, 2008). In 2012, 20.1% of adolescents between the ages of 18–24 "had neither graduated from secondary school, nor signed up for school at all" (Mennta- og menningarmálaráðuneyti, 2014, p. 21). Students specified that reading comprehension accounted for a large portion of their difficulties in school (Arnbjörnsdóttir, 2007, p. 65; Mennta- og menningarmálaráðuneyti, 2014, p. 20).

When Icelandic students enroll in upper secondary education, beginning ages 16–18, studies show that reading comprehension poses a problem for many adolescents. Furthermore, Berman (2010) stated, "It seems clear that there are many secondary school graduates who feel that their *first language* reading skills do not meet their needs" (p. 17). In 2012 proficiency level tests showed that many adolescents in Icelandic schools are struggling with some form of reading comprehension, with 2.3% who scored below level 1b, 5.4% at level 1b, 13.3% at level 1a, and 24.7% at level 2 of the PISA reading proficiency scale (OECD, 2012, p. 194; OECD, 2014, February, table 1.4.1a). (*PISA skill-levels* are on a scale of 1 through 6—with 6 as most

proficient—, and 1 as least proficient) (Language Policy Division, n.d.). This means approximately 45.7% of students scored at or below level 2 (OECD, 2014, February); with only 5.8% of students tested scored at level 5 or above (OECD, 2014, table 1.4.1a).

The link between L1 and L2 reading skills seem clear, as Hamers and Blanc (2000) explained, "if a child has not learned to use language as a cognitive organiser, to a significant extent, introducing him to a second language does not promote this function" (the organisation of knowledge) (Hamers & Blanc, 2000, pp. 105-128). This means that the use of L1 as a cognitive organizer for using language as a tool for literacy skills needs to sufficiently develop. Thereafter, if L2 is introduced before that, L2 learning does not facilitate the development of L1 as a cognitive organizer. These skills include using language as a tool for thinking about abstract concepts, understanding decontextualized language, and using language in a productive (speaking and writing), rather than only a receptive (listening and reading) manner, such as when communicating conceptual knowledge.

Researchers agree that literacy will continue to play an increasingly vital role in educational and labor fields for Icelanders (Mennta- og menningarmálaráðuneyti, 2014; OEDC, 2013; OECD, 2014, Feb). Approximately 90% of texts that constitute required reading material at the University of Iceland are written for native English language students (Arnbjörnsdóttir & Prinz, 2010). This poses a valid concern for those studying in many content area subjects because, as Arnbjörnsdóttir and Prinz (2013) stated, the "Use of English as a medium of instruction is increasing steadily" in many subjects at the University of Iceland and in other Nordic country universities (p. 3). Consequently, Arnbjörnsdóttir (2007) urged the need for curriculum improvements of English education, with "intensive language teaching" for ages 9–11 through grade 10, in order to prepare students for "life in the modern multilingual, multicultural, multinational world" (p. 71).

1.3 Definitions and primary reading components

This thesis purports that literacy entails understanding texts for multiple purposes, from knowing how to read, to using reading as a tool for learning, for thinking about abstract concepts, and for conveying abstract ideas. It entails developing reading skills ranging from understanding how to read the letters of the English alphabet, its words, sentences, and ultimately progressing to using reading for thinking, that is, to be able to read complex texts and develop conceptual knowledge, for academic purposes and

beyond educational settings. Moreover, L2 English learners, who develop literacy proficiency for understanding more cognitively demanding forms of texts, should be proficient enough to understand texts requiring a deeper understanding of texts such as classical literature and those with historically and culturally embedded meanings. Consequently, in order for literacy to develop to proficiency learners need to develop primary component skills.

- Literacy

Literacy begins with having obtained reading skill (Rayner et al., 2001), and depends on the various purposes for reading. There are various levels of defining literacy, such as the mid-level definition Rayner et al. (2001) give, as "Reading is getting meaning from print" (p. 34); and a broad definition for understanding a written language for specific purposes. Defining *literacy*—for text comprehension—ranges from simple to complex competencies. These can be for the simple purpose of understanding certain computer literacies, ranging from social networking to computer technology; or the understanding of auto repair manuals, bus schedules, travel maps, cooking instructions, recipes, or prescription medicine instructions. Thus, *literacy* includes not only the ability to read but also to read with understanding of subject-specific and cultural specific knowledge, which is "the extension of basic skill to reasoning and discourse in a domain (Perfetti & Marron, 1998)" (as cited in Rayner et al., 2001, p. 34). Berman et al. (2005) define literacy as "the set of skills and abilities that students need in grades 4–12 to read, write, and think about the text materials they encounter (p. 5). Thus, literacy involves having an understanding of various things, such as cultural, unwritten, or implied meanings; formal and informal culturally acceptable and unacceptable forms of written texts; and contexts. Readers need sufficient cognitive abilities to process abstract ideas, an ability to use inferencing, which requires background knowledge; and an understanding to infer authors' underlying intentions, ambiguous phrases, and colloquial meanings (Berman et al., 2005; Hamers & Blanc, 2000; Rayner et al., 2001)! It encompasses a broader and deeper meaning, which is more than only decoding skill and reading aloud. The OEDC (2013) define reading *literacy* as:

> A wide range of cognitive competencies, from basic decoding, to knowledge of words, grammar and larger linguistic and textual structures and features, to knowledge about the world. It also includes metacognitive competencies: the awareness of and ability to use a variety of appropriate strategies when processing texts. Metacognitive competencies are activated

> when readers think about, monitor and adjust their reading activity for a particular goal. (pp. 9-10)

Including only the reading component of literacy, Torgesen, Houston, Rissman, Decker, Roberts, Vaughn, Wexler, Francis, Rivera, and Lesaux, (2007) define *academic literacy* as:

> the kind of reading proficiency required to construct the meaning of content-area texts and literature encountered in school. . . . [As well as,] the ability to make inferences from text, to learn new vocabulary from context, to link ideas across texts, and to identify and summarize the most important ideas or content within a text. . . . [In addition,] academic literacy includes . . . the ability to think about its meaning in order to answer questions that may require the student to make inferences or draw conclusions. (p. 3)

This notion is perceived with the understanding that when adolescents are able to think critically in terms of conceptual knowledge, they are more able to develop as independent thinkers; to be reflective, observational, and evaluative; are more able to apply reasoning and interpretative skills; and to determine text and author credibility and validity (OEDC, 2013). For example, adolescent thinking develops as they use critical analysis about things such as abstract topics, concepts, ideas, the opinions of others, and the texts from which they read in school.

- Metacognition

Metacognitive strategies involve thinking about one's own thinking and how one best learns something. Saskatchewan Learning (2004) clearly defines *metacognition* as they quote others by stating:

> Efficient learning involves the active control, coordination, and monitoring of learning processes and strategies. Campione, Brown & Ferrara (1982, p. 436) state that: Metacognition is knowledge about oneself as a learner, knowledge about the task, and knowledge about the skills and strategies needed to perform the task. Executive control is the process of selecting, monitoring, and overseeing the effectiveness of learning based on feedback, and regulating learning by activating appropriate strategies. (as cited in Saskatchewan Learning, 2004, p. 26)

Two domains of knowledge are necessary for learners to advance in proficiency from basic reading abilities to using language as a tool for learning. They are *linguistic knowledge* and *background knowledge*. These two domains work together and are dependent upon the other (Wren, 2001). *Linguistic knowledge* comprises *phonology, semantics*, and *syntax*. *Background knowledge* is to know, understand, or have experience with something related to the subject of study, which is a mental underpinning for interpreting texts.

- Primary reading components

When learners have difficulty recognizing printed words, they experience reading comprehension difficulties. It is therefore, important to highlight several underlying *primary component* skills necessary for reading comprehension to take place. Kamil (2003) pointed out three areas of significant importance for preventing reading difficulty, which are the *alphabetic principle, fluency,* and *comprehension* (p. 6). Lacking basic skills can mean an inability to understand simple to mid-level complex texts, such as bus schedules, employment advertisements and real estate contracts. Moreover, a small percentage of adolescents have reading difficulties because they lack awareness of these component skills. However, to ensure learners receive appropriate remediation, it is important educators recognize these components, and target them with systematic interventions. Consistent or chronic struggling with any of them can cause learners to lose motivation to read, which may result in giving up on reading altogether (Biancarosa & Snow, 2006). Because some struggle with decoding words and recognizing them automatically, reading fluency slows down, and their ability to comprehend complex text is hindered (Berman & Biancarosa, 2005; Edmonds et al., 2009; Kamil, 2003).

The *Alphabetic Principle* "(that written symbols are associated with phonemes)" is central to reading (Rayner et al., 2001, p. 31). Learners need the knowledge of speech sounds; and how they relate to print or letters, (which leads to) how to decode unknown words. These skills prepare learners for reading fluency.

Alphabetics include phonics and phonological awareness. *Phonics* is the parsing of individual sounds, i.e. of letters, and the ability to blend letters using the sounds they represent to make words. It comprises of the knowledge of the relationship between phonemes and graphemes; the ability to map between graphemes and phonemes; the understanding that letters and a string of letters have associated sounds, and when blended together they make syllables and words; and the knowledge to use this

information in order to decode words and read. *Phonics* is not the same as *Phonics Instruction*, which is an instructional approach that teaches the phonetic value of letters (graphemes) and how to blend their corresponding sounds (phonemes) to identify and read words. Learners need to be able to identify phoneme—grapheme correspondences. For example, it is possible that a learner knows the letter "t" represents the sound /t/, but does not know that the letter or sound for "t" is in the written word "top" (Wren, 2001, p. 38).

Phonological awareness includes phonetics and phonemics. *Phonological awareness* is the ability to hear, identify, and manipulate sounds or units of oral language. It "is the strongest predictor of early reading skill" (McShane, 2005, pp. 2, 33; Rayner et al., 2001, p. 38). Skills include "the ability to rhyme words, to break words into syllables, and to break syllables into their onset and rime" (McShane, 2005, p. 37). *Onset* is the part of word or syllable that comes before the vowel(-s), such as **sh**-, **fl**-, **ch**-, or **pl**-. *Rime* refers to the part of a word or syllable that includes a vowel and consonant sounds that follow, such as -**ack**, -**ale**, -**eat**, or -**ook**. *Phonetics* is making the connection between individual speech *sounds* that correspond to their symbolic representation, such as the sounds that make up letters, syllables, and words. *Phonemic*s is the system of speech sounds and spoken utterances—the study or systematic classification of sounds in spoken utterance*s.*

Decoding is the ability to systematically recognize and read letters, syllables, and words by identifying their corresponding sound-symbol relationships (McShane, 2005, p. 13). This includes words that do not follow regular grapheme-phoneme correspondences or common spelling patterns (pp. 40-41). It is recognizing words regardless of their irregularity of spelling. For example, "steak" and "beak" look the same but do not sound the same. The ability to distinguish the different pronunciations of each word correctly requires decoding skill (McShane, 2005; Wren, 2001, pp. 23-25, 32-35). The National Institute for Literacy (2007) acknowledged that,

> Because word identification is one of the foundational processes of reading, middle and high school students with poor or impaired word identification skills face serious challenges in their academic work. Some struggling adolescent readers have difficulty decoding and recognizing multi-syllabic words. For example, words such as "accomplishment" leave many struggling readers unsure about pronunciation or meaning. This is often the case not just because their

> vocabulary is limited, but also because they are unaware of or not proficient in word-learning strategies based on understanding the meanings and functions of affixes (e.g., prefixes and suffixes) and other word parts. . . . In content areas in which text is more technical and abstract, insufficient vocabulary knowledge can become especially problematic for struggling readers. (p. 15)

There is however, a distinction between decoding and deciphering. *Deciphering words* is the ability to sound out words using letter knowledge. For example, the following words and pseudo-words can be deciphered: *mop*, *cop*, *zop*, and *pop*.

Reading fluency lags when cognitive resources for comprehending texts are less available because the learner is using them to decipher or decode words, for example. When learners use a majority of their cognitive resources to decode words rather than to comprehend them, it puts a strain on any remaining cognitive resources, and they struggle with reading comprehension because they are trying to decode words at the same time as trying to read (National Reading Panel, 2000, p. 3-8). These cognitive resources need to be available, so that learners can comprehend with automaticity. Thus, insufficient decoding skill that causes a lack of reading fluency puts a strain on reading comprehension and cognitive resources, which should be available for comprehending (National Reading Panel, 2000, p. 3-8; Saskatchewan Learning, 2004). *Fluency* is also a primary reading component related to adolescents struggling with reading comprehension. Difficulties with reading fluency at the word- or sentence-level can cause reading comprehension difficulty. The National Reading Panel (2000) stated that *automaticity* and *fluency* are used synonymously to mean the "processing of information that requires little effort or attention" (p. 3-7).

Vocabulary development and *reading comprehension* come under the domain of comprehension. Vocabulary development refers to the development of knowledge about the meanings and uses of words. The development of receptive vocabulary (words understood) and expressive vocabulary (words used, also known as *productive*) are critical for reading comprehension. *Reading comprehension* refers to the understanding of the meaning of a passage (U. S. Department of Education, August, 2012, p. 2). Comprehension also involves both vocabulary knowledge and comprehension strategies or "procedures that guide students as they read" (Kamil, 2003, p. 6).

Second language or L2 learning includes "the learning of any language, to any level, provided only that the learning of the 'second' language takes place some time later than the acquisition of the first language" (Mitchell & Myles, 2004, p. 5). Therefore, 'second languages' are any languages other than the learner's 'native language' or 'mother tongue' (p. 5).

No matter how rudimentary some component skills appear to those who have already mastered them, some learners do not master them, and consequently risk chronic struggling with reading. Reading comprehension skills are essential for reading academic texts, but they do not come naturally. This is why condensing what research suggests and highlighting their recommendations to make them salient to educators is crucial. Suggestions presented are for educators who may appropriately address these necessary areas before students pass through "grades until they are unable to read as adolescents" (Kamil, 2003, p. 6).

1.4 Review of the literature and research question

This study draws from a combination of studies from Canada, the US, the E.U. and Iceland, as well as more generally from cognitive theory, general learning, language learning, and second language learning. The scope of the review includes English L2 learners as well as native English L1 learners, from beginning readers to the end of upper secondary-levels of education (up to the end of high school, US grade 12 or ages 18 to 20). Likewise, it extends to English L2 learners in Iceland. The review includes an extensive body of research literature, confirming promising and positive effects for increasing reading comprehension for English L2 learners. However, the amount of published research and literature on reading comprehension instruction for older adolescents is scarce. More scant is the available research for older L2 adolescent learners. Therefore, this thesis draws predominately from empirical research studies of English L1 adolescents, L1 and L2 learners in the elementary grades, beginner readers of any age and ethnic background, and to a limited extent from older adolescent English L2 learners (McShane, 2005; National Reading Panel, 2000; Torgesen et al., 2007). Where there are gaps in existing research for L2 learners, and until more research exists, much of the research indicates adhering to what research already shows to be effective in teaching English L1 readers, struggling adolescent readers and beginner readers (McShane, 2005; National Institute for Literacy, 2007).

The primary aim of this literature review is to determine how to identify and target remedial aspects of reading that causes L2 readers to struggle with text comprehension for academic purposes.

The study addresses the following question:

> Are there effective reading models used by L1 English language learners, which may improve Icelandic students' L2 English language reading comprehension?

I have formulated the following hypothesis:

> The teaching of primary reading components, reading strategies, and peer-reading models may be effective for improving L2 reading comprehension of English texts since they are effective for improving reading comprehension for L1 readers.

Furthermore, when learners struggle with reading comprehension, higher-order thinking develops less proficiently. Thus, because research indicates that learners lacking knowledge of *primary language components* tend to struggle with reading comprehension, this study explores essential components needed for beginner readers. This does not imply that these component skills are not systematically taught in Icelandic English classrooms. Rather, it is to highlight that some adolescents somehow and at some time fail to learn them. Next, the study explores commonly employed *strategies* that successful readers use before, during, and after reading to aid reading comprehension. Thereafter, because current research indicate promising and positive effects on comprehension improvement with structured *collaborative learning* and peer reading, this study presents several peer-reading models that incorporate strategy use. In conclusion, justification and reasoning for collaborative learning is presented in a discussion about *cognitive development* and learning in social settings.

Moreover, an examination of theories of sociocultural learning and cognitive development are included, because they provide crucial insight for language learning contexts when used in classrooms involving communicative interaction and reading comprehension strategy instruction.

Some L1 English language classrooms use these approaches and models to support reading comprehension. Few studies of these models involve English L2 learning environments. However, Torgesen et al. (2007) postulated that, "Research-based practices that have been identified to

ensure the development of successful reading skills in monolingual students may also benefit ELLs [English Language Learners]". They added that,

> the complexity of academic language in middle and high school classroom texts, combined with the wide variability in ELLs' language and academic backgrounds, are reasons to emphasize the need for systematic and explicit vocabulary and comprehension instruction, in all content areas, for adolescent ELLs. (pp. 91-92)

2 Background to the study

Reading comprehension research validates supporting struggling learners with reading comprehension by providing opportunities for cognitive development. Using collaborative peer learning models, helping to increase learner background knowledge, academic vocabulary, and subject-specific knowledge can do this, by teaching primary component skills, providing valid assessments, and by providing learning and reading strategy instruction. Research also encourages professional learning opportunities for improving educator awareness and a deeper knowledge of the processes involved in reading, assessments, and strategy instruction (McShane, 2005; Torgesen et al., 2007).

Sociolinguists and cognitive theorists suggest theories and approaches, such as processing approaches, processability approach, information-processing model, analysis-control framework, and learning strategies (Hamers & Blanc, 2000; Mitchell & Myles, 2004), all of which will be defined and discussed below. These approaches are important for reading comprehension because of their general cognitive principles. They apply to L2 learning, such as by teaching general learning strategies and reading strategies that improve fluency, and by implementing procedures that can potentially lead to better reading comprehension monitoring.

Moreover, there are sociocultural theorists who are concerned with processing approaches to L2 learning, and constructionist or emergentist approaches, cognitive child development, and social-context learning theories, hence, *sociocultural theory*. Additionally, Lexical Functional Grammar (LFG) is a grammar theory that comprises the study of linguistic knowledge, explaining grammatical functional relationships, and the

multiple variables of lexical elements. However, LFG "attempts to represent both linguistic knowledge and language processing within the same framework", and includes cognitive features (Mitchell & Myles, 2004, p. 111). Unlike LFG theorists, the Universal Grammar (UG) theorists view language as linguistics *to be described* and *explained*. Those in this field of study are concerned with theories of linguistic knowledge at the sentence-level, of phonemes, morphemes, and syntax. They believe all humans possess an innate language mechanism, which attempts to explain how languages are acquired, beginning at birth. Regarding L2 grammar, they are concerned with the linguistic system behind the L2, and the constructions facilitating L2 competence. However, their concerns with language learning are neither about semantics, pragmatics, discourse, nor about social or psychological features (Mitchell & Myles, pp. 92-93, 96-7). Conversely, some cognitivist theorists are concerned with these aspects of L2 learning.

Among cognitive theorists, there are those who are "concerned with developing transition or processing theories to complement property theories, . . . [and those] who do not think a separation between property and transition theories is legitimate"—believing that general cognitive principles are used for processing language knowledge (Mitchell & Myles, 2004, p. 97). Processing and constructivist approaches come under these two groups, respectively. Cognitive theorists are interested in "how the brain processes and learns new information. . . . how learners [retrieve or get access to] . . . linguistic knowledge in real-time, or in the strategies they might employ when their incomplete linguistic system lets them down", and what strategies are in use during L2 communication (Mitchell & Myles, 2004, pp. 95-6).

Between the two cognitive theorists' groups are contrary perceptions of how L2 learning occurs. Some include property theories, such as UG theory, in addition to Processing Approaches from cognitive psychology, such as Information-Processing Approaches and Processability Theory (Mitchell & Myles, 2004). These two are concerned with how both short-term and long-term memory stores, processes, and then automatizes new information (Mitchell & Myles, 2004, pp. 97-102). Additionally, some have taken it a step further by positing that automatization leads to inferencing strategy (Nassaji, 2011; Perfetti, 2005; Smith, 1981; Smith, 1986). Furthermore, the Information-Processing Approaches, such as the *Adaptive Control of Thought* (ACT) model, "defines the acquisition of skills (such as mathematics, language, information technology) as the establishment of complex procedures (procedural knowledge), integrating elementary pieces of information (declarative knowledge) (Anderson, 1983)" (as cited in

Hamers & Blanc, 2000, p. 117). Additionally, an analysis-control framework gives a "functional view of skilled components" (p. 117). Thus, Information-Processing Approaches and models explain how representations of linguistic structure within one's cognitive faculties facilitates the ability to analyze language structure, thus allowing for retrieval and controlling of knowledge, both of which are needed for "higher cognitive operations" (p. 117).

Several theoretical paradigms from Processing Approaches seem to explain how the mind works, and may begin to explain how L1 proficiency scaffolds learner abilities to achieve L2 proficiency levels. One such approach may be considered in the following summary of the *Information-Processing* Model proposed by McLaughlin (1987, 1990) (Mitchell & Myles, 2004, p. 99). *Information-Processing* involves cognitive processes of declarative and procedural processing and of short-term and long term-memory, which allows the learner to shift efficiently learned knowledge and skills from learning processes, beginning with controlled procedures and continuous practice, to automatic retrieval.

Automaticity is important for reading comprehension as it incorporates fluency of letter and word recognition and reading. Language learning is a cognitive skill, just as learning is a skill (Mitchell & Myles, 2004, pp. 99-102). For example, when learning to drive an automobile one follows the procedures and rules previously learned. One practices until thinking about the procedures and rules are no longer needed, because they have become automatized. One begins by purposely doing that which was previously learned until gradually, responses move from controlled learning and practice to automaticity. When language items are deliberately learned and/or committed to memory, and consistently practiced, they can be more automatically retrieved, such as when a user has practiced learned procedures until their responses have moved into automatic responses (Mitchell & Myles, 2004, pp. 100-101).

Anderson's (1983, 1985) *Adaptive Control of Thought* (ACT) model is similar, except it includes broader aspects for usage within general cognitive learning skills and second language learning (Mitchell & Myles, 2004, pp. 99-110). In essence, declarative and procedural knowledge leads to automatization (Mitchell & Myles, 2004, pp. 102-110). When one learns something, it is merely something one knows *about*, but does not yet know *how* to do the procedure, i.e. how to do what is necessary (Mitchell & Myles, 2004). For example, as in the driving example above, a learner is taught how to drive a standard transmission automobile, which requires

manual shifting of the transmission. In class, the learner learns that he/she shifts the gear at a certain time according to the feel and sound of the engine. However, until the learner actually practices doing it, he/she only *knows* the procedures, but cannot *do* them well until practiced. Such general learning approaches resemble language-learning strategies, which may be effective for improving reading comprehension. (See strategy learning in section 5).

There are two influential second language-learning hypotheses, albeit debatable, concerning how L2 is learned. Krashen (1977, 1978) proposed the *Acquisition-Learning hypothesis* and the *Input hypothesis* (as cited in Mitchell & Myles, 2004, pp. 44-48). He posited that there are two separate and distinct language-processing mechanisms. People *acquire* a second language parallel to how children acquire their first language, by picking up what they hear around them, and generalizing about the language form and function. Concerning the *Input hypothesis*, Krashen proposed that to *acquire* a language a person needs only input from their environment, just as how babies receive input during their language developmental years. Input needs to be meaningful and, in order to learn, one needs exposure to language in the form of listening. Spoken forms of language may be, for example, of unknown language aspects containing contextually embedded communication, or spoken language that is slightly more than the learner's present knowledge. On the other hand, according to Krashen, language *learning* entails explicit conscious learning and deliberately paying attention to language form in naturalistic contexts (Mitchell & Myles, 2004, pp. 44-47).

In contrast to Krashen's view, Hamers and Blanc (2000) give a definition of *acquisition* and *learning* as follows. The *acquisition* of language occurs from the onset of the development of infancy, through to the beginning of puberty, as Lenneberg (1967) hypothesized, as the *critical period for language acquisition*—between ages 3-12, for normal development. Once L1 competency is intact, subsequent languages are *learned*, rather than *acquired* as in the L1 development (as cited in Hamers & Blanc, 2000, pp. 28-29, 74-75; Mitchell & Myles, 2004).

Furthermore, Krashen proposed that *implicit* knowledge is competence acquired through exposure. Conversely, *explicit* knowledge is learned competence, through deliberately teaching or learning, and guiding the learner's attention to particular forms of language.

Bialystok proposed that implicit knowledge, explicit knowledge, and general knowledge all reside in discrete areas of one's perception.

Connecting these hypotheses together and returning to the concept of the *automaticity* of language retrieval and reading fluency, Smith (1981) explained Bialystok's notion, of explicitly learned knowledge as becoming—"implicit knowledge via *automatisation*"—or how L2 learners are able to "perform automatically" (Smith, 1981, pp. 164-165). Smith (1981) stated that knowledge, whether explicitly or implicitly taught, all end with the result of moving into the cognitive place of explicit knowledge, to a long-term memory area of the brain for language-specific storage and retrieval, allowing automaticity to occur (Smith, 1981, pp. 164-165; Smith, 1986).

Conversely, *Information-Processing* model approach to learning is seen as short-term memory items that shift to one's long-term memory through repeated activation; i.e. by the processing of all the things one has learned. This then moves one towards the ability to use *inferencing strategy* (Smith, 1981, p. 165), activates automaticity, and with continued practice, reading fluency develops. Information-Processing is simply the storing and retrieving of learned items until automaticity facilitates usage.

However, most research literature about reading processes are generated from L1 research, which advances the notion that "basic cognitive processes operate similarly across languages" (Nassaji, 2011, p. 175). Likewise, Mumin (2011) advanced the notion "that readers' first language (L1) literacy and second language (L2) grammatical knowledge often work together to enhance advanced second-language reading comprehension" (p. 129). Other theories assume the lower-level comprehension processes, such as word recognition, must take place before higher-level processes. However, Mumin pointed out Stanovich's (1980) Interactive Compensatory model and Bernhardt's (2005) Compensatory model of L2 reading, both of which suggest that the L1 and L2 interact (Mumin, 2011). This interaction implies "that any deficiency in readers' knowledge can be actively assisted by the interaction between the L1 and L2 without specific consideration of a "hierarchical nature" of lower- and higher-level processes (p. 131). Moreover, Hamers and Blanc (2000) postulated that in order to learn to read an L2, one must first have L1 literacy fully developed as a cognitive organizer (for reading). Furthermore, they stated, "We would claim that more than the fact of teaching literacy in L1, it is the valorisation of L1 as a cognitive tool by the school which is responsible for the development of literacy" (Hamers & Blanc, 2000 p. 347).

The teaching of cognitive and metacognitive strategies gives indications of positive effects for improving reading comprehension (Antonacci & O'Callaghan, 2011; Hamers & Blanc, 2000). As Hamers and Blanc (2000)

explained, the importance of the use of language is that it is a tool for cognitive organization (pp. 98-100, 127-132; 229). Although they predominately addressed conditions relating to bilingualism, they supplied ample evidence indicating sufficient cognitive development is vital for literacy functions (p. 129). Cognitive development takes shape as learners learn to analyze, process information and experiences, evaluate information, understand comparisons and contrasts, use mnemonic devices, and exercise control of their own attention, for example, during a conversation, lecture, or reading. Thus, language development involves aspects of both the communicative and cognitive competencies, which need development for literacy functions. Language as a cognitive tool involves general psychological processes, whereby language becomes a means of organizing knowledge, such as using it for text understanding by "classifying, forming hierarchies, and inferencing, etc." (p. 117).

Cognitive strategies are learning strategies that readers use to help with their reading and comprehension (Antonacci & O'Callaghan, 2011). Beginner readers use reading strategies such as making predictions before, during, and after reading; looking at titles, subtitles, graphics; paraphrasing; skimming; and scanning texts. As learners progress in their reading abilities, advanced readers use language as a tool for learning. By writing or during peer learning discussions, learners may use any or a combination of several cognitive strategies to help them learn. These may include actively engaging with the text while reading; activating prior knowledge; making connections from the text with what they already know; previewing texts before reading; using strategies for understanding unknown words—before, during, and after reading; understanding text structure, such as narrative, expository, comparative and contrastive texts; and summarizing main ideas and points (Antonacci & O'Callaghan, 2011). Skilled readers employ any of these strategies in order to comprehend reading (Biancarosa & Snow, 2006).

Hamers and Blanc (2000) described relevant L2 aptitude as a variable involved in cognitive organisation, which is necessary for internalizing concepts embedded in L2 (pp. 228-229). They identified four major components of L2 aptitude: phonemic encoding, grammatical sensitivity, inductive language-learning ability, and memory (p. 229). When children have learned these skills they have moved from socially controlled, context-embedded communication with little analyzed knowledge about something more than their present and visually understood information, and move to a socially decontextualized or "context-reduced and cognitively demanding language behavior" (pp. 98-99). Subsequently, learners will need to reach

levels of self-regulated control and understanding about language as they develop metalinguistic skills.

However, mere communicative skills are not sufficient for developing cognitively complex skills needed to understand and use decontextualized language requiring a "certain level of abstraction" and "as an active organiser in thought processes" (Hamers & Blanc, 2000, p. 119). Rather, it is metalinguistic awareness that is considered a major factor in the cognitive growth and the development of literacy, and is a predictor of reading achievement (p. 362).

Metacognitive strategies involve thinking about one's own thinking and how one best learns something, for example, knowing one learns better in a quiet room, alone, or knowing one needs more time and perhaps note cards to study biology or math, but not a novel. Metacognitive strategies are used to control cognitive activities to reach cognitive goals (i.e. comprehend a story). Hence, strategies help learners comprehend complex academic texts. For example, learners use self-questioning strategies while reading. If one cannot answer these questions generated, then re-reading the paragraph or whole text is the next strategy that may be used (Antonacci & O'Callaghan, 2011).

An additional and effective means to facilitate learning to read is the social dimension, which encourages and enhances literacy-related skills (Hamers & Blanc, 2000, pp. 114-123). Social learning, where learners learn in collaborative settings, is not a new concept (Lantolf, 2000). Research is clear in showing positive effects for improving reading comprehension for those who are learning in social interactive settings with peers or others who are more competent (Fuchs, Fuchs, Thompson, Svenson, Yen, Al Otaiba, Yang, McMaster, Prentice, Kazdan, & Saenz, 2001; Slavin, 1995a). Social interactive learning environments facilitate learning for adolescents who are struggling with reading, comprehension, and language usage. Some collaborative approaches to reading are *Cooperative Integrated Reading and Composition* (CIRC) and the bilingual version (BCIRC), *Read 180*, *Peer Assisted Learning Strategies (*PALS) (and high school PALS), *Reciprocal Teaching*, *one-on-one tutoring, small group* or *peer tutoring models,* and several others, including these models while learning primary literacy component skills, and reading comprehension strategies.

Teachers can promote the concept of learning in social settings, by introducing models of *collaborative reading and learning*, and collaborative strategy use. Collaboration with others provides opportunities for cognitive growth. Rogoff (1990) cited Vygotsky who postulated that interacting with

peers who are not equal in skills and understanding but who are equal in power has the potential "to bring about cognitive growth" (Rogoff, 1990, p. 148). When educators give learners opportunities to observe and learn from others who are more proficient in understanding or skills, cognitive growth has potential to take place (Rogoff, 1990). Additionally, allowing learners to work together to construct and reconstruct language knowledge (Mitchell & Myles, 2004, p. 23) gives learners opportunities to add to their understanding. Furthermore, Rogoff explained, "Development builds on the internalization by the novice of the shared cognitive processes, appropriating what was carried out in collaboration to extend existing knowledge and skills" (Rogoff, 1990, p. 141). For example, when teachers pair-up learners with peer partners and give them time to participate in discussions about the contents of a reading assignment, word meanings, story structure, or to practice reading a chapter in a book, an article, or practice reading-comprehension strategies, learners are situated for opportunities to develop cognitively.

Those who adhere to strategy instruction purport that it facilitates reading comprehension as learners' cognitive growth develops. When participating in strategy use and language or reading practice learners may learn the perspectives of others, or other ways of understanding reading assignments, text contexts, background knowledge, and the numerous connotations of vocabulary meanings. Students develop as they participate in using strategies, such as debating, sharing perspectives, discussing for clarifications, summarizing meanings, practicing speaking L2, and reading aloud to one another. Hence, peer sharing has the potential to add to one's background knowledge and understanding.

Social interaction, such as learning together and sharing understanding and knowledge, encourages and scaffolds learning (Ellis, 2003; Firth & Wagner, 2007; Hall, 1995; Hall & Verplaetse, 2000; Kamil, Borman, Dole, Kral, Salinger, & Torgesen, 2008; Rogoff, 1990). *Scaffolding* is a supportive means given to the learner in a collaborative setting with a more competent skilled individual (Rogoff, 1990). *Scaffolding* begins with instructional support, such as different forms of communication, as in nonverbal modeling, conversing, collaborative talk, questioning, supportive dialogue, guided learning tasks, or interactions between a learner and a more skilled person (Hamers & Blanc, 2000; Mitchell & Myles, 2004; Rogoff, 1990). As the learner begins to learn new concepts, skills, or procedures that may not be fully understood or performed without assistance, the more skilled person or capable peer may provide support (Antonacci & O'Callaghan, 2011; Peterson et al. 2000). This can be done by directing

learner attention to something unknown by them, or by providing assistance until he or she is capable of understanding a concept or doing a task on his or her own. The more skilled person gradually removes support when the learner is capable of carrying out the task or understanding the concept. Afterwards, the more skilled person can introduce another new concept, skill, or task, and provide direction and guidance leading to and enabling the less skilled person's learning autonomy.

2.1 Justification for the study

Struggling with L1 reading comprehension may affect students' abilities to develop cognitive organizing in the L2. The majority of 15-year-old students in Iceland do not struggle with literacy. However, according to PISA results for the year 2009, 22.2% of the students scored at level 2, 11.5% scored at *level 1a*, 4.2% scored at *level 1b* and 1.1% scored at *below level 1b* (OECD, 2010c). As OECD (2010a) specified, level 2 is the baseline, which means learners at this level may have difficulties with,

> locating basic information that meets several conditions, making comparisons or contrasts around a single feature, working out what a well-defined part of a text means when the information is not prominent, or making connections between the text and outside knowledge by drawing on personal experience and attitudes. (pp. 46-48)

The scores represent native language reading abilities for 15-year-olds. However, the extent of L1 competence correlates to the potential to develop L2 competence (Cummins, 1979a, b). Concerning the *Developmental Interdependence* hypothesis Cummins (1979b) stated that,

> the development of competence in a second language (L2) is partially a function of the type of competence already developed in L1 at the time when intensive exposure to L2 begins. (p. 222)

PISA scores indicate a need to address factors that may relate to reading comprehension difficulties for Icelandic adolescent learners. Adolescents in Icelandic middle and secondary schools need preparation in skills for comprehending reading material they will encounter in upper secondary school and may encounter at tertiary-level. Because the processes involved in learning reading comprehension skills are complex in nature, and take a

long time to develop, there remains a need to provide support for the students who struggle with reading comprehension skills in L1 and L2.

Reading instruction and proficiency ought to have occurred in the elementary-levels of education, but for various reasons it did not happen for some learners. As adolescents depart elementary reading levels, they enter the secondary-levels of education where their focus on reading changes from learning *how to* read to using reading as a major source of information from which *to learn*. If learners do not successfully acquire basic reading skills before they enter secondary-levels of education they will struggle with learning *from* reading.

For older students, there are various explanations as to why some struggle with literacy skills. However, research has shown that there is a percentage of older learners who struggle with primary reading component skills (Biancarosa & Snow, 2006; McShane, 2004; Torgesen et al., 2007), and that characteristics of reading difficulties are traceable to components leading back to early primary-grades (Berkeley et al., 2011; Berman & Biancarosa, 2005; Edmonds, Vaughn, Wexler, Reutebuch, Cable, Tackett, & Schnakenberg, 2009; Kamil, 2003; Wren, 2001). Components and factors that may affect reading comprehension and literacy skills, specifically for alphabetic language systems, include orthography, the alphabetic principle, phonological awareness, decoding skills, fluency, semantics, background knowledge, syntax, and vocabulary knowledge (Biancarosa & Snow, 2006; Edmonds et al., 2009; Kamil, 2003; Kamil et al., 2008; McShane, 2004; Nassaji, 2011; National Reading Panel, 2000; Rayner et al., 2001; Torgesen et al., 2007; Wren, 2001, pp.23-27).

Furthermore, Edmonds et al. (2009) stressed Kamil's (2003) findings of struggling secondary readers, who said they lack advanced abilities or knowledge in decoding, fluency, vocabulary and comprehension skills (Edmonds, 2009, p. 263). For older students, the possible lack in knowledge and skills may be in elementary concepts and skills involving *phonetic development, comprehension skills,* and *reading strategies*. For comprehension to occur, according to Edmonds et al. (2009) students with difficulties have:

> problems with one or more of the following: (a) decoding words, including structural analysis; (b) reading text with adequate speed and accuracy (fluency); (c) understanding the meanings of words; (d) relating content to prior knowledge; (e)

> applying comprehension strategies; and (f) monitoring understanding. (p. 263)

Adolescents who have difficulty comprehending academic texts may have reading difficulties related to other areas, which are not salient to the teacher. Barr et al. (1995) suggested "three general areas that may interfere with comprehension" (p. 9). They include: "(1) inadequately developed print skill; (2) inadequate vocabulary knowledge"; and "(3) inadequately developed strategies for understanding text" (p. 9). Furthermore, Perfetti et al. (1996) proposed six components that may be insufficiently present and contributing to comprehension failure. They are, working memory limitations, lexical processes, inference making, comprehension monitoring, word meaning, and domain knowledge (pp. 140-142).

Although some L2 English learners may lack knowledge of primary language components, others may lack knowledge of skills or strategies for comprehending subject-specific or academic literacies. Mumim (2011) proposed *upper-register texts, superior-level texts,* and *advanced-level texts* synonymously when he referred to cognitively more complex uses of literacy knowledge, involving "authentic academic texts that require readers to use higher-order thinking skills to process and comprehend target languages" (p. 129; Antonacci, 2011; Thürmann et al., 2010).

Learners face challenges when their language component skills are not sufficient to comprehend academic and expository texts they encounter. When learners have not learned to transfer strategies of reading by understanding specific text structures when reading content area text, educators should explicitly teach them. Expository text structures, unlike narrative texts, are descriptive and factual, and include cause and effect, problem and solution, comparison and contrast, timelines, chronological order, or sequences, descriptions, concept ideas with examples, and propositions with support.

Students need to be able to reflect upon and evaluate text, draw upon knowledge, ideas or attitudes beyond the text, as well as consult their own experience or knowledge to compare, contrast, hypothesise, and assess claims (OECD, 2013). However, 2009 and 2012 PISA assessments revealed that Icelandic students' scores for being able to *reflect* and *evaluate* upon texts were lower than in any other skills assessed (OECD 2014, Feb, Annex Table 1.4.4). The scores indicate student difficulties are with the ability to relate the contents of the text to instances beyond the text, and make

connections with what they read to their own life, knowledge, experience, and knowledge of the world outside the text.

Regarding the foreign language context, educators are indispensable for helping their students increase understanding of content. At the elementary-level, if language instruction includes suggested components of reading instruction and learning strategies, students may use and transfer these skills to their secondary-levels of education and beyond. As Arnbjörnsdóttir (2007) proposed, teachers

> at the upper primary level should . . . start intensive language teaching, with an ever increasing emphasis on teaching academic literacy skills up to the 10th grade. Instruction should ideally focus on academic reading and writing strategies, textual awareness and strategy training, and preparation for reading and writing in English at the secondary level. (p. 71)

Although Arnbjörnsdóttir (2007) had English instruction in mind, such advice may also be applied to Icelandic instruction, keeping in mind that transfer of skills between languages may well occur (Arnbjörnsdóttir, 2007; Cummins, 1979a).

2.2 The need for improvement

In 2009, approximately 25% of Icelandic students ages 25–34 had not completed upper secondary education (framhaldskóli) (Mennta- og menningarmálaráðuneyti, 2014). In addition, The Ministry of Education, Culture, and Sciences reported that of those ages 25–64, 29% had not completed upper secondary education (Mennta- og menningarmálaráðuneyti, 2014, p. 13). The data appears to reflect a continuing trend of adolescents struggling with academic work, quite possibly including reading comprehension.

In fact, many other countries, report the same trend. Recent assessment scores of Icelandic 15-year-old adolescents in primary compulsory education indicate that the prevalence of reading comprehension difficulties is on the rise (OECD, 2014; Mennta- og menningarmálaráðuneyti 2014, pp. 14-15). The percentage of reading difficulties rose, as reflected in an increased number of low PISA scores (i.e. at, and below, level 2) between 2000 and 2012, from 15% to 21% (as cited in Mennta- og menningarmálaráðuneyti, 2014).

Likewise, some nations and communities face additional challenges "despite sustained and large-scale efforts" to provide educational programs for improving academically struggling learners, because the achievement gaps remain in Europe, the US, and other countries (Thürmann et al., 2010, pp. 5, 11). European studies cited in the OECD and The Council of Europe suggested the need for various changes in school policies, at national and local levels, for providing more support to those struggling with language issues, which the PISA scores reflect (Cummins, 2011; OECD, 2010 a, b, & c; Thürmann, 2010). These numbers reflect—to some degree—the performance of students who struggle with specific literacy related skills while attending compulsory schools.

Approximately 6 to 8 million American adolescents assessed as poor readers may struggle with academic requirements and job preparedness "because they are unable to read and comprehend the material in their textbooks" (as cited in Kamil, 2003, p. 1; Berman et al., 2005, pp. 1, 4; Slavin, 2008b, pp. 290-291). The students who do not learn to read at lower-levels of education risk never learning to read or being able to use language as a cognitive organizer for literacy (Hamers & Blanc, 2000). Berman and Biancarosa (2005) stated, "as students get older, the more potential exists for their falling even further behind and becoming disengaged from learning (p. 7). Moreover, Maheady et al. (2006) have pointed out that "reading failure starts early, persists, and often escalates throughout the school years" which risks students failing to complete school (pp. 65-66).

2.3 Educator awareness

Educators ought to be mindful that many children may not already possess an awareness of printed material (Barr et al., 1995 Strickland, 2002). They may not have had many prior encounters with reading materials. Some learners experience the enjoyment of reading during their earliest encounters with texts. For others however, some may have "grown up in an impoverished linguistic environment" (Wren, 2001, p. 23) where interaction with printed material did not take place (Strickland, 2002). When early experiences with reading were not pleasant or had never existed, unpleasant experiences can persist throughout a lifetime unless educators provide intervention measures to resolve reading deficiencies (Peterson et al., 2000, p. 8). These learners may enter primary school already behind their literature-rich peers.

Because many children begin elementary education having gained little background knowledge, few experiences, or interactions that prepared them for reading readiness (National Institute of Child Health and Human Development, 2000; Peterson et al., 2000, Wren, 2001), educators should know how to determine what interventions are needed to help these students. Components of alphabetics and print skill knowledge are predictors upon entry in beginning primary-school grades, which are associated with beginner learners' ability to learn to read during their first two years in school (Kamil, 2003; National Institute of Child Health and Human Development, 2000; Rayner et al., 2001).

If educators do not administer interventions after the third grade, readers will likely continue to struggle (National Institute of Child Health and Human Development, 2000; Rayner et al., 2001; Wren, 2001). Early intervening is important in order to identify and pinpoint primary causes of reading deficiencies; otherwise learners may struggle with reading throughout their education, and afterwards (Edmonds et al., 2009; Kamil et al., 2008; Peterson et al., 2000; Thürmann et al., 2010). Furthermore, when reading interventions are not in place, some students remain at risk throughout their early learning experiences, and may continue through adulthood (Hamers & Blanc, 2000, p. 319; Kamil, 2003; OECD, 2010b, p. 4; OEDC, 2013). With valid reading assessments, educators can make sound decisions using reliable data for planning interventions that target the areas that are causing reading comprehension difficulties, and build upon readers' areas of strength (National Institute for Literacy, 2007).

Supporting adolescent learners in upper elementary, secondary and upper secondary-levels of education is possible when educators are skilled in identifying whether struggling reader deficiencies are a result of insufficient knowledge of either *primary component skills*, or comprehension-related aspects of reading, such as fluency, sufficient vocabulary knowledge, or reading strategies. When more proficient adolescent readers struggle as a result of something other than difficulties in primary component skills, their source of reading difficulty may stem from a lack of background knowledge, such as domain specific knowledge, vocabulary knowledge, such as academic or subject-specific knowledge, or reading fluency (Antonacci & O'Callaghan, 2011; Edmonds et al., 2009; Mumin, 2011; Nassaji, 2011).

Although all students ought to have learned basic literacy principles by the time they have entered secondary-grade levels, educators ought not to assume all of their students have learned the essential foundational literacy

principles. Additionally, it is important to understand a distinction between those who lack sufficient vocabulary knowledge and those who lack primary skills in their first language (Kamil, 2003, p. 6; McShane, 2005, p. 35). Some struggling readers are L2 learners (e.g. EELs in the US; Icelandic learners in Iceland), and may have a limited amount of vocabulary, or lack knowledge of comprehension strategies (Kamil, 2003, p. 6). Nevertheless, studies show adolescent readers in the US often continue to struggle because of a deficiency in at least one aspect linked to literacy-related skills (Berman & Biancarosa, 2005; Edmonds et al., 2009; Kamil, 2003); and yet literacy skills are highly important components of reading (Rayner et al., 2001). Appropriate assessments are necessary to find the root of learner difficulty (Rayner et al., 2001; Slavin, Lake, Davis, & Madden, 2011).

As assessments reveal, many struggling readers—those who have missed appropriate literacy instruction—continuously lag behind their grade-level for reading and comprehending texts. Unaware of how to help prepare their learners for reading requirements in content area assignments, educators feel frustrated (Fuchs et al., 2001; Kamil et al., 2008; Van Roekel, 2008; Slavin et al., 2008b). Correspondingly, Kamil et al. (2008) emphasized the notion of other researchers, who stressed that,

> teachers circumvent the need for students to read texts by adjusting their assignments or methods of presenting content, rather than helping students learn the discipline-specific strategies needed for content-area work. (as cited in Kamil et., 2008, p. 5)

Kamil (2003) suggested the kind of instruction needed is effective, targeted literacy instruction. Additionally, Antonacci & O'Callaghan (2001) postulated that, "Effective literacy instruction for adolescent students occurs when content area teachers are knowledgeable about the nature of literacy development and possess the appropriate strategies to teach reading and writing within their disciplines" (p. 2). It is the responsibility of all educators to equip themselves to help struggling readers, as the Council of Europe posited the following:

> Because knowledge is virtually inseparable from the language that embodies it, the project "Languages in Education–Languages for Education" (LE) of the Council of Europe takes the view that all teachers must be language teachers in the sense that they are aware of specific language demands of

> their subject(s) and of appropriate strategies for language support. (as cited in Thürmann, Vollmer, & Pieper, 2010, p. 5)

Content area educator awareness of reading skills and literacy components is advantageous. All educators ought to learn how to identify the nature of reading difficulties, so they can further guide those who are struggling with reading and those who are scoring below grade-level standards in reading and literacy proficiency. For example, teachers might help their learners understand subject-specific disciplines of study by guiding them both in writing (Biancarosa & Snow, 2006, pp. 14-15; Torgesen et al., 2007) and in reading. Torgesen et al. (2007) gave examples of how teaching language skills in content area classes may look. For example, teachers could identify content and a language objective for each lesson. This idea is central to the sheltered instruction (SIOP) model (Echevarria, Vogt, & Short, 2004),

> in which both objectives are stated at the beginning of the lesson planning process, and teachers address both content through language and language through content. . . . Reading comprehension skills may be improved by building background knowledge before reading or by teaching conceptual vocabulary that is central to the topic. (as cited in Torgesen et al., 2007, p. 95)

Content area educators often receive little or no training in assessing and diagnosing reading difficulties, and developing appropriate materials for identifying the source of the reading difficulty, and thus, are in need of further knowledge and competency (Rayner et al., 2001, p. 67). Typically, they learn to assess by interpreting standardized test scores (Barr et al., 1995, p. 7). Some standardized scores neither appropriately test for nor reflect the source of reading problems (Collier, 1989; Rayner et al., 2001; Slavin et al., 2011). Collier (1989) posited that,

> reading scores are considered to be a more valid predictor of L2 thinking skills than language arts scores. A standardized language arts test typically measures the easily taught aspects of language. . . . In contrast, a reading test usually measures, through reading comprehension passages and vocabulary analysis, the ability to think in the language. . . . A reading test is a better predictor of students' academic performance in the

> second language at the secondary and postsecondary levels. (p. 521)

Reading assessments include formative, summative, and diagnostics. General assessments may include testing for phonological awareness, rapid naming, word recognition, oral reading, vocabulary and background knowledge (McShane, 2005, p.24). Initial formative assessments, such as observations of students' reading abilities, are advisable, along with summative assessments, followed by diagnostics and interventions (Peterson et al., 2000). The National Institute for Literacy (2007) reminds us of the importance of valid focused assessments as they postulate that, "Without assessments that are sensitive to the contributions of each component to overall reading ability, teachers will not be able to target their instruction to the skills and strategies most in need of improvement" (p. 27). Furthermore, Musset and Valle (2013) suggested appropriate assessments that may better narrow the focus in order to address the needs of Icelandic students, for those who risk dropping out of school (p. 27). Likewise, OECD (2012) expressed the same in a report that stated schools in Iceland showed a "lack of quality diagnosis" to improve secondary student dropout rates (p. 7).

Educators ought to learn specific strategies for informal assessments of learners' reading difficulties (Kamil et al., 2008, pp. 31-33; Peterson et al., 2000, p. 7). Peterson et al. (2000) advised beginning with informal assessments by observing the learner's abilities to read, decode words, respond to questioning and paraphrase after reading (with a peer or a teacher), and encourage think-alouds during reading. Teachers may observe learners using the think-aloud strategy in content area learning to understand learner strengths and weaknesses of their reading comprehension, monitoring, and strategy use. Research recommends that teachers explicitly model and explain appropriate ways of doing think-alouds, and allow students to practice them with a partner, then by themselves (National Institute for Literacy, 2007).

Formative assessments are informal and given on an on-going basis. Three categories of formative assessment approaches are questioning, observation of strategies, and assessment of performance. They may include tracking learner performance and development by questioning learner comprehension, observing learners' use of reading strategies, conducting and observing classroom discussions, and reading students' work (National Institute for Literacy, 2007, p. 27). Teachers should carefully construct questions for assessing the content of students' reading passages,

because some assessments take into account only general questions, which some learners can answer without having read the material (National Institute for Literacy, 2007). Furthermore, oral questioning helps educators assess whether or not learners know primary components, such as letter- or vowel-sounds, how to divide and pronounce syllables, and multisyllabic words (McShane, 2005, p. 36). Oral analysis for fluency-reading assessments can also include word, passage, paragraph, and chapter reading, in class or privately to the teacher.

The National Institute for Literacy (2007) suggested three broad categories for questioning learners:

1. Ask questions that focus on content.
2. Ask questions that focus on learner use of skills and strategies during reading.
3. Question learners about the self-questioning or think-alouds they use during reading. (pp. 28-29)

Summative assessments include quizzes, end-of-chapter tests, and formal standardized measures of reading (National Institute for Literacy, 2007, p. 27). These assessments provide data that inform educators, schools, and districts of student performance, progress, and of the effects of the chosen curriculum; they provide an overall picture of student competencies and guide educational decisions.

Initial assessments can clarify whether or not learners will need word-level, comprehension, or strategy knowledge interventions. Measures are available for basic phonemic decoding skills, word analysis, word recognition, spelling, and fluency (oral and silent reading are ways of evaluating fluency). When testing for fluency and speed, one should have the learner read orally for one minute, as quickly as possible. Then count the number of correctly read words. If the learner reads fewer than 125 words per minute, there may be other aspects in need of assessing (McShane, 2005, pp. 105-106).

The following are suggestions by McShane (2005) for initial assessments for older L2 learners:

- Oral interviews; decoding or word-recognition tests
- Test of Word Reading Efficiency (TOWRE) (Torgesen, Wagner, & Rashotte, 1999)
- Roswell-Chall Diagnostic Test of Word Analysis Skills: Revised and Extended (Roswell & Chall, 1997)
- Wide Range Achievement Test 3 (WRAT-3) (Wilkinson, 1993)

- Oral vocabulary test
- Peabody Picture Vocabulary Test—3rd edition (PPVT-3) (Dunn & Dunn, 1997) (test of receptive vocabulary; learner matches spoken words with pictures)
- Expressive Vocabulary Test (EVT) (Williams, 1997) (learner generates synonyms) Diagnostic Assessments of Reading. Another option for initial assessment is to give one or more of the subtests of the Diagnostic Assessments of Reading (DAR) (Roswell & Chall, 1992). This comprehensive instrument includes tests of word analysis (decoding), word recognition, spelling, oral passage reading, comprehension, and oral vocabulary. (McShane, 2005, pp. 107-108)

A small percentage of learners have difficulties with some aspect of phonemic awareness skills, word analysis, and reading comprehension. Kamil (2003) stated that for the past 30 years adolescents have shown a trend of struggling with some aspect of reading comprehension, with 10 percent who struggle with "word analysis and related skills" (p. 29). Some of these students will need assessing for phonics skills to reveal the letter-sound relationships that learners have already mastered, and the ones that need intensive targeting (McShane, 2005). The *Comprehensive Test of Phonological Processing* may be necessary for beginners and for those who do not yet know some aspects of phonology. A learner may know most aspects but show signs of deficiency in, for instance, blending vowels or syllables. Saskatchewan Learning (2004) provides an excellent resource of assessment templates (pp. 95-161).

Thus, difficulties in reading comprehension may or may not stem from print skill or primary grammatical elements. Educators will need to determine the struggling readers' areas of difficulty, by diagnosing separately, for print skill, vocabulary knowledge, fluency, and comprehension strategies (Barr et al., 1995, p. 10).

Thürmann et al. (2010) suggested that, "curriculum has been based on the (false) assumption that all learners are brought up in the dominant school language and enter the classroom with comparable language competences" (p. 11). Likewise, comprehension assessment scores indicating reading comprehension difficulties may not represent true results of literacy skills relating to comprehension. Instead, comprehension problems may indicate deficiencies in lexical knowledge. This occurs when educators fail to distinguish testing for both word-identification skills and comprehension skills. Assessing these two distinct skills may reveal general language-comprehension deficiencies because of a lack of vocabulary

knowledge, not because of reading comprehension problems. Rayner et al. (2001) highlighted the differences between general reading comprehension, academic vocabulary knowledge, and false appearances of proficiency due to general conversational abilities. Additionally, Hamers and Blanc (2000) pointed out others (Mohanty, 1994) who posited that when testing for literacy proficiency, one needs to be mindful of the differences between assessing literacy proficiency and metalinguistic competence, because they each draw on separate cognitive skills (Bialystok & Ryan, 1985; as cited in Hamers & Blanc, 2000).

3 Learning English in Iceland

The increasing percentage of Icelandic learners who lag behind in L1 reading competence may also struggle with L2 English texts as advanced proficiency levels become more complex, because, as noted, L1 competence relates to L2 potential proficiency (p. 97; Berman & Biancarosa, 2005; Biancarosa & Snow, 2006). Jeeves (2008) also concluded, in reference to Icelandic students' English reading that, "reading comprehension proficiency in English appears to reflect a general reading problem rather than a problem of knowledge of the foreign language" (p. 66). Therefore, implementing necessary interventions in both languages to resolve struggling reader difficulties may be crucial.

English academic literacy is essential in Iceland if only because a high percentage of upper-level subject-specific classes (and university courses) require reading texts in English. Previous studies of first year Icelandic university students surveyed gave indications that learners overestimate their own English language competence based on an assumption that their conversational skills are proficient enough for upper-level academic studies (Arnbjörnsdóttir, 2007; Ingvarsdóttir & Arnbjörnsdóttir, 2010a).

However, as Hamers and Blanc (2000) have argued "mere mastery of a language for everyday communication is not sufficient to guarantee that it will be used in a more sophisticated organisation of knowledge" [as]

> metalinguistic skills interact with social cognition to produce a language of communication which is different from the language of everyday communication. They find their more elaborate expression in literacy skills, such as reading and writing, in which information processing cannot rely on contextual clues. (p. 119)

In fact, Cummins (2011), noting the cognitive relationship between L1 and L2, suggested implementing programs for resolving specific L2 literacy development needs, as well as the plurilingual needs of struggling individuals. Supportive of these findings, Hamers & Blanc (2000) recognized a significant flaw perpetuated by some countries, specifically predominantly monolingual nations. This may occur in other nations that maintain dominant language status. However, the flaws show that policy advisors misinterpreted research when recommending *dominant language only*, rather than heeding the evidence that supports bilingual education (Hamers & Blanc, 2000, p. 347). Hence, conversational knowledge of a language is

not enough to facilitate higher-order thinking skills, which is what secondary and upper secondary-level reading involves.

The status of English in Iceland is unique. Clearly, its official status is that of a foreign language (Icelandic Ministry of Education, Science, & Culture, 2012, p. 103). However, unlike other foreign languages English has been claimed to be, in some ways, closer a second language considering native Icelanders' colloquial, conversational, and passive knowledge of the language (Arnbjörnsdóttir, 2007 pp. 52-56). On the other hand, when addressing curriculum needs that accommodate students of specific disciplines of study, such as those in science or medical fields, there is a need to help learners "develop a lexical base and enough discourse awareness to prepare [them] for academic study" (Arnbjörnsdóttir, 2007, p. 74). It is therefore necessary to reexamine the academic English curriculum for both younger and older adolescents in primary and secondary schools; this thesis builds on these premises.

Throughout compulsory school grades, learners will need to increase their competence to better understand texts, according to Pressely (2000), in order "to make inferences, draw conclusions, and engage in critical thinking" (as cited in Torgesen et al., 2007, p. 8). Arnbjörnsdóttir (2007) suggested the need for expanding vocabulary and literacy skills for developing English productive skills in upper primary-levels of education in Iceland. One intention is to improve learners' *productive*, rather than only *receptive* skills in English, with the aim of equipping students for further fields of study or employment.

In a survey of university level instructors in Iceland, 12.4% reported they found it "very or rather difficult" working with two languages in academic work, while 34.6% reported "rather easy", and 53.1% reported it is "easy" (Ingvarsdóttir & Arnbjörnsdóttir, 2010a). Among the university instructor respondents, 80% admitted having to use some form of scaffolding, so that their students could better understand the English reading material. Their study indicates that English language texts comprise over 95% of the reading materials in Science and Medicine, compared to 100% in the Agricultural and Engineering fields. In Social Sciences, Humanities, and Law the percentage is slightly less (Ingvarsdóttir & Arnbjörnsdóttir, 2010b; Arnbjörnsdóttir & Prinz, 2013). Based on their findings, they proposed that English curricula in Iceland needs revision, with the lower-levels of education better preparing students for more than *passive-receptive* understandings of English. In addition, considering the increased need for the comprehension of academic English texts, Ingvarsdóttir and

Arnbjörnsdóttir (2010a) emphasized the importance for Icelandic curriculum writers of secondary English courses to consider the seriousness of curriculum choices "when writing the curriculum for English, making decisions about the content, and offering courses in reading academic English" (p.8).

- *Developmental Interdependence Hypothesis*

Language-specific innate mechanisms that allow humans to develop language proficiency require a great deal of exposure to language, i.e. settings providing speaking, gesturing, communicative exchanges, and listening opportunities (Hamers & Blanc, 2000; Mitchell & Myles, 2004; Rogoff, 1990). There is the assumption that when cognitive processes and the use of one's first language as a cognitive organizer for language and for thinking are already established, then these processes for language-specific mechanisms are available for L2 use (Hamers & Blanc, 2000; Mitchell & Myles, 2004). Since L2 learners already have some L1 language ability, the question is whether their L1 literacy skills are sufficient for developing higher-order functions to facilitate L2 development. If so, can they process L2 proficiently enough to comprehend texts consisting of abstract concepts (Cummins, 1991; Hamers & Blanc, 2000; Mitchell & Myles, 2004)?

Cummins' (1979a) *Developmental Interdependence Hypothesis* means that to the degree a child's literacy skill competence is in his or her first language, he or she is capable of reaching that degree or level of competence in his or her second language (assuming appropriate preconditions have been met, such as intensive exposure to L2, amongst other things). Hamers and Blanc (2000) explained, "that the level of competence of L2 is partly a function of competence developed in L1, at the start of exposure to L2" (Hamers & Blanc, 2000, pp. 97-98). However, during beginning stages of L2 learning, if the child is exposed to L2 language environments, but has not yet developed literacy skills involving higher-order cognitive organizing capacities both in L1 and L2, and his L1 has not been valorized or was severely minimized during developmental stages, then, "he is not able to use his L1 for new literacy-related functions when he starts acquiring them because he can only rely on his limited knowledge of L2" (Hamers & Blanc, 2000; pp. 99-103; 128; 131–case 5; 353; Mitchell & Myles, 2004).

Grabe (2009) pointed out when referring to Cummins' Developmental Interdependence Hypothesis, that many experts agree that when one's L1 literacy skills are firmly in place, L2 learners still have the potential for developing proficiency as L2 readers (Cummins, 1979b; as cited in Nassaji,

2011). Torgesen et al. (2007) noted the consensus of research, which posited that, "In the case of adolescent ELLs, the ability to draw on native language skills relate directly to the amount of instruction they have received in that language (Genessee, Lindholm-Leary, Saunders, & Christian, 2006)" (as cited in Torgesen et al., 2007, p. 92).

Furthermore, when L1 "literacy-related functions" are not fully developed, and when exposure to and knowledge of L2 are limited, both languages will not suffice for literacy and cognitive competence (Cummins, 1979b; Hamers & Blanc, 2000, p. 131). If the learner is using L2 for cognitively demanding processing of concepts, such as those found in decontextualized academic-level texts requiring abstract thinking, then the learner is relying on an underdeveloped L2 (Hamers & Blanc, 2000). If a learner experienced a disruption in education during the time that reading development should have been taking place, such as between the ages of seven through nine, and his or her first language literacy skills did not develop sufficiently, then the learner will likely not be able to fully develop L2 literacy related skills (Cummins, 1979b; Hamer & Blanc, 2000). When one's L1 is fully developed, the language becomes a cognitive tool and organizer for language and cognitive thought, such as learners' ability to think about language, abstract and ambiguous concepts, and learning strategies, i.e. having the ability to use inferencing (Hamers & Blanc, 2000).

Cummins' (1979b) research of the *threshold hypothesis* clearly summarizes the consequences relating to cognition and literacy capabilities as he postulated that,

> as the curriculum content becomes more symbolic and requires more abstract formal operational thought processes—the children's "surface" L2 competence must be translated into deeper levels of "cognitive competence" in the language. The development of adequate literacy skills are obviously important in this respect. The child whose reading comprehension skills is poorly developed will be handicapped in assimilating most types of subject matter content after the early grades. (p. 231)

Therefore, it is imperative that adolescent learners master more than conversational L2 proficiency. In order to develop the critical thinking, reflective and inferencing skills necessary for understanding content area texts, learners' cognitive and linguistic abilities must develop to advanced levels of proficiency. Thereafter, learners are more capable of learning from

decontextualized academic texts. In other words, learners' L2 English proficiencies should enable them to use the language as a tool for thinking about complex concepts, and for productive skills, such as writing and communicating about complex conceptual knowledge. For example, when cognitive aspects of the L2 were measured, Finnish immigrant children learning Swedish, perceived to be highly proficient because of their conversational abilities, were found to exhibit a "linguistic facade" (as cited in Cummins, 1979b, p. 231; Cummins, 1979a, p. 199). In the same vein, Skutnabb-Kangas and Toukomaa (1976) discussed research of L2 learners' language proficiency, showing that mere conversational fluency was not the same as understanding and performing complex "cognitive aspects of the language, understanding of the meanings of abstract concepts, synonyms, etc. as well as vocabulary" (as cited in Cummins, 1979b, p. 231).

A considerable body of evidence supports a relationship between L1 cognitive and literacy skill competencies, including Cummins' *Developmental Interdependence* hypothesis, to L2 literacy skills, cognitive skills, and executive-control functions (such as memory) (Cummins, 1991; Hamers & Blanc, 2000; Nassaji, 2011). At the same time, in reference to Cummins' hypothesis, Hamers & Blanc (2000) referred to the cognitive demands of academic language, when both L1 and L2 are a part of learners' school language, and said,

> that cognitive academic proficiency can be conceptualised along two independent continua: the first receiving meaning (from context-embedded to context-reduced); the second refers to the degree of cognitive involvement in the verbal activity (from cognitively undemanding to cognitively demanding). Thus, a verbal task may be cognitively demanding or not and, at the same time, be more or less context-embedded. Many of the linguistic demands of the school rely on context-reduced and cognitively demanding language behaviour. (Hamers & Blanc, 2000, pp. 98-99)

This means learners need to develop literacy skills in L1, according to Cummins (1984), in order to develop "deeper conceptual and linguistic competence that is strongly related to the development of general literacy and academic skills" (as cited in Hamers & Blanc, 2000, p. 98). Learners who have not developed proficiency of higher-order thinking skills necessary for academic language, which is context-reduced, may not have developed literacy or metalinguistic proficiencies (Hamers & Blanc, 2000, pp. 85, 119).

Drawing from a body of empirical studies, Cummins (1991) reviewed studies that measured learners' specific domains of interdependence between L1 and L2 academic skills, i.e. executive-order skills, linguistic syntax, literacy-specific skills, and cognitive processing capacities of specific domains of language for literature, and conversational decontextualized and contextual environmental factors. The studies showed that L2 learners who were first formally educated for several years in their L1 scored significantly better in L2 reading proficiency than those who did not receive formal education in L1 prior to learning L2. Additionally, they showed "L1 cognitive and literacy skills contributed significantly to the development of L2 cognitive and literacy skills" (Cummins, 1991, p. 78), suggesting that learners "who can more systematically employ executive-control functions in their L1 are more likely to do so in their L2" (p. 81). Thus, supporting the interdependence hypothesis, L1 cognitive development for academic or decontextualized aspects of proficiency contributes to L2 learning. Cummins (1991) posited that proficient cognitive processing develops to a capacity in one's L1 development of higher-order cognitive abilities for thinking and processing linguistic syntactical processing skills. This in turn, allows for self-regulation. Moreover, it provides for an automaticity of response, which plays an important role on memory processes. When performing linguistic tasks in L2, learner automaticity of memory processing is slower than their memory processing in L1, therefore L2 linguistic processing is not as automatized.

Torgesen et al. (2007) highlighted research that showed,

> adolescent ELLs with good reading comprehension skills and behaviors in their first language—such as the ability to draw inferences from text and to monitor comprehension strategically—can apply them to their English language reading, and (2) ELLs can use knowledge structures and concepts that are well developed in their first language to build their knowledge in English rapidly by learning new (i.e., English language) labels. (p. 92)

Consequently, when learners struggle with reading comprehension in their first language they may have difficulties when reading English L2 texts. In 2012, PISA results showed that 45.7% of Icelandic students scored at or below level 2 proficiency in L1 reading (Mennta- og menningarmálaráðuneyti, 2014; OECD, 2012). These scores may reflect

difficulties with L1 reading comprehension or any cognitive aspects of L1, which could have an effect on their L2 development.

4 Primary reading components

There is a significant body of research emphasizing the necessary areas on which educators ought to focus to improve adolescents' reading comprehension (Antonacci & O'Callaghan, 2011; Berman & Biancarosa, 2005; Edmonds et al., 2009; Fuchs et al., 2001; Kamil, 2003; Kamil et al., 2008; Nassaji, 2011; National Institute for Literacy, 2007; National Reading Panel, 2000; Rayner et al., 2001). During elementary stages of development, many learners successfully learn these component skills; unfortunately, many do not. Primary prerequisites are the *alphabetic principle, phonological components*—comprising *phonetics, phonemics,* and *phonics instruction* (Edmonds et al., 2009; Peterson et al., 2000; Rayner et al., 2001). In addition, much reading research data indicate four essential areas central to reading are *alphabetics, decoding, fluency* and *vocabulary knowledge*. Others indicate the secondary components that are essential, are *reading comprehension skills* and *learning strategy instruction* (Antonacci & O'Callaghan, 2011; Barr et al., 1995; Berman et al., 2005; Edmonds et al., 2009; Fuchs et al., 2001; Kamil, 2003; Kamil et al., 2008; Peterson et al., 2000; National Reading Panel, 2000; Rayner et al., 2001; Torgesen et al., 2007; Wren, 2001). Explicitly teaching primary component skills is a different approach from the framework of the *Whole-Language Instructional* Approach. How best to teach primary component skills is a highly debated topic. Rayner et al. (2001) acknowledged, "the debate on how to best teach reading has focused on whole-language versus phonics approach" (p. 32). A brief comparison of these two approaches is examined in section 4.1.1.

When educators explicitly teach basic literacy components to those who show deficiencies, learners have a better chance of comprehending the academic texts they encounter (Antonacci, 2001; Berman & Biancarosa, 2005; Edmonds et al., 2009; Nassaji, 2011; Rayner et al., 2001; Torgesen et al., 2007). Research suggests all educators, including content area teachers, should gain a basic understanding of reading instruction in order to better understand and help their struggling readers (National Institute for Literacy, 2007; Torgesen et al., 2007). Moreover, students can practice learning

primary component skills with peers using strategies in small groups and one-on-one. These literacy components are important aspects of reading comprehension, potentially leading readers to a lifetime of reading success (Cummins, 2011; Edmonds et al., 2009; Peterson et al., 2000; Rayner et al., 2001; Wren, 2001; Thürmann et al., 2010).

Some adolescents struggle with foundational key components. Readers must have a firm understanding of primary components and develop in each simultaneously, rather than one at a time (Saskatchewan Learning, 2004). Struggling readers often suffer from a lack of decoding skill, which affects fluency. The National Reading Panel (2000) reported that both are central to reading. Because literacy instruction usually ends after the third grade, it is necessary to address research recommendations of the literacy components specific to adolescent L2 beginner readers through secondary–grades. Following are discussions of the component parts, which research suggest are essential for reading comprehension for beginners and L2 learners. McShane (2005) reminds us why learners need to know these essential components:

> Comprehension requires active, strategic thinking, but it also requires basic reading skills: decoding (word identification), fluency, and vocabulary (knowledge of word meanings). Unless decoding is automatic and reading is fluent, comprehension suffers. So another way to understand the reading process is to see it as a *hierarchy of skills* (Pressley, 2001). Beginning with letters and sounds, moving to identification of words, fluent use of those skills, and understanding of the meaning of words and sentences, *comprehension is the culmination of a series of processes*. (as cited in McShane, 2005, p. 73)

Primary components are the foundations on which reading builds. Each is essential to reading comprehension. When one or more are missing, people will struggle with reading. When learners are competent understanding and using primary component skills, they can more easily add secondary component skills, which facilitate reading proficiency. Figure 1 represents the essential prerequisite component skills and secondary additional components that relate to achieving proficiency in reading comprehension (Cummins, 2011; Edmonds et al., 2009; Peterson et al., 2000; Rayner et al., 2001; Wren, 2001; Thürmann et al., 2010). (Discussions of these are throughout this article, except for the motivation component).

Primary prerequisite components	Secondary & Additional components
Background knowledge	
Decoding Skills	Comprehension Skills
Alphabetic Principle	Reading Skills
Fluency	Learning Strategies
Vocabulary Knowledge	Motivation

Figure 1: Components of Literacy. Essential reading comprehension components

4.1 Alphabetic principle and alphabetics

In order to read, learners must understand the *alphabetic principle*. Letters combine to make up spoken words, and written words represent spoken sounds. This entails being able to *decode* words—making a connection between the letters and the sounds they represent. This is what readers do as they sound-out letters to pronounce or read written words. *Alphabetics* include *phonological awareness*—the knowledge of the internal sound structure of spoken words; both *phonemics*—the study of language structure in terms of phonemes and the ability to manipulate the oral sounds, and *phonetics*—the system of speech sounds and spoken utterances; and *phonics*—which relates to the sounds of speech and the knowledge of the correspondence between letters and sounds. For reading to become automatic, learners need automaticity for recognizing sight words and letters that make up words. They also need to be able to respond by reading them with relative accuracy. When they are able to do this, they ought to progress to the next level of reading sentences fluently.

As discussed, primary component skills contribute to the comprehension of more cognitively sophisticated texts. However, not all research recommends explicit phonemic instruction for older learners. For example, there are strategies that learners can use to efficiently learn word meanings (National Institute for Literacy, 2007), such as explicit instruction (Kamil, 2003). Additionally, Nassaji (2011) and others have argued that among older students, the more frequent people read, the more they acquire or build-up a corpus of new vocabulary (National Institute for Literacy, 2007; Torgesen et al., 2007).

Like native L1 English adolescents, most Icelandic secondary school learners do not struggle with the sounds of the letters of an alphabet. Contrary to what many believe, adolescent literacy problems do not always stem from comprehension, as Kamil (2003) stated, "there remains a group of middle and high school students who have reading problems that result from not having mastered the alphabetic principle" (p. 9). However, after reviewing a large amount of research, Kamil (2003) pointed out that one out of every ten American adolescents have serious difficulties identifying words (p. 8). Other research also found that approximately 10% of secondary students somehow missed learning the basis of the English alphabet (Biancarosa & Snow, 2006; Kamil, 2003; Torgesen et al., 2007). Because L1 learners struggle in this area, L2 learners may also. This is why it is necessary that educators are aware of the need to recognize and appropriately assess for specific elements, such as decoding or identifying words, and phonological aspects of word analysis, which may be the causes of reading difficulty (Kamil, 2003; Torgesen et al., 2007). Additionally, the knowledge of principle component parts of the English language and what predominant research says about how to teach them to adolescent learners, may or may not be common knowledge to all educators. Wren (2001) and others recommended that learners need explicit and systematic instruction of these skills, especially when diagnostics reveal their absence (Kamil, 2003; McShane, 2005; Saskatchewan Learning, 2004; Torgesen et al., 2007). Otherwise, when reading depends on the reliance of a list of memorized sight words only, and learners independently cannot decode words, their abilities to discover how to read unknown words, and reading fluency will be impoverished (Kamil, 2003; McShane, 2005; National Reading Panel, 2000; Rayner et al., 2001; Wren, 2001).

Studies indicate that learners who received direct explicit instruction of the alphabetic principle and phonological aspects scored higher than those who received reading instruction with the Whole-Language or Whole-Word Approaches (Rayner et al., 2001, pp. 34, 43, 63-68). However, other researchers additionally suggest focusing instruction on "high-frequency sound-spelling relationships and words", [and] frequent opportunities to practice identifying words in context (Kamil, 2003, p. 18). The alphabetic principle, its major components—the grapheme and phoneme, and how they relate to one another can be seen in Figure 2. It represents letters of the English alphabet that relate to their corresponding sounds (National Reading Panel, 2000).

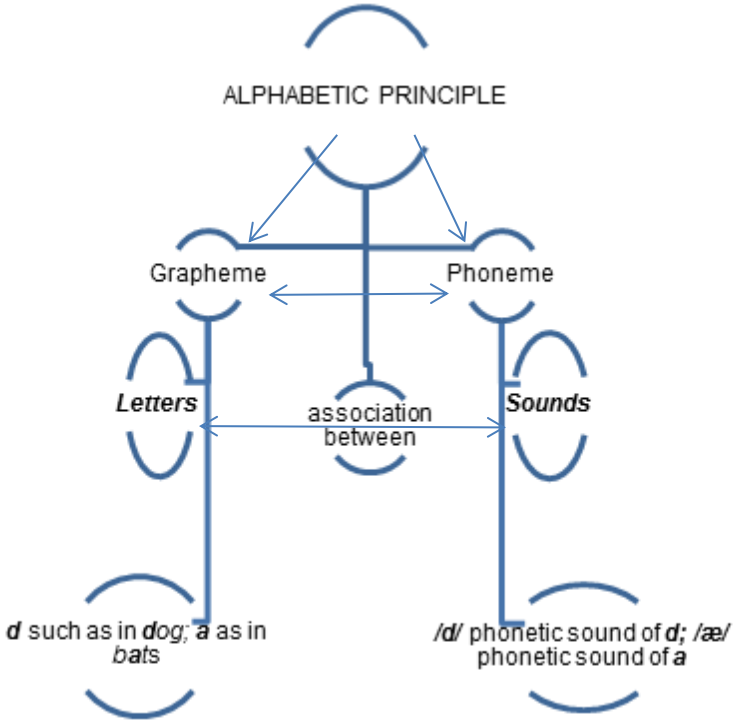

Figure 2. Alphabetic Principle. Alphabetics contain graphemes & phonemes, which correspond to or represent each other

Thus, the *alphabetic principle* is the ability to map individual written units, called *graphemes* to corresponding elements of sound, called *phonemes*. This is in contrast, for example, to a morpho-syllabic writing system, "in which the characters map onto syllable units that are also usually morphemes" (Rayner et al., 2001, p. 32).

Alphabetics involves developing "skills needed to decode print to speech or oral language" (Kamil, 2003, p. 17). Figure 3 shows a representation of the relationship of alphabetics to its components, phonological awareness and phonics, and their components—phonetics and phonemics.

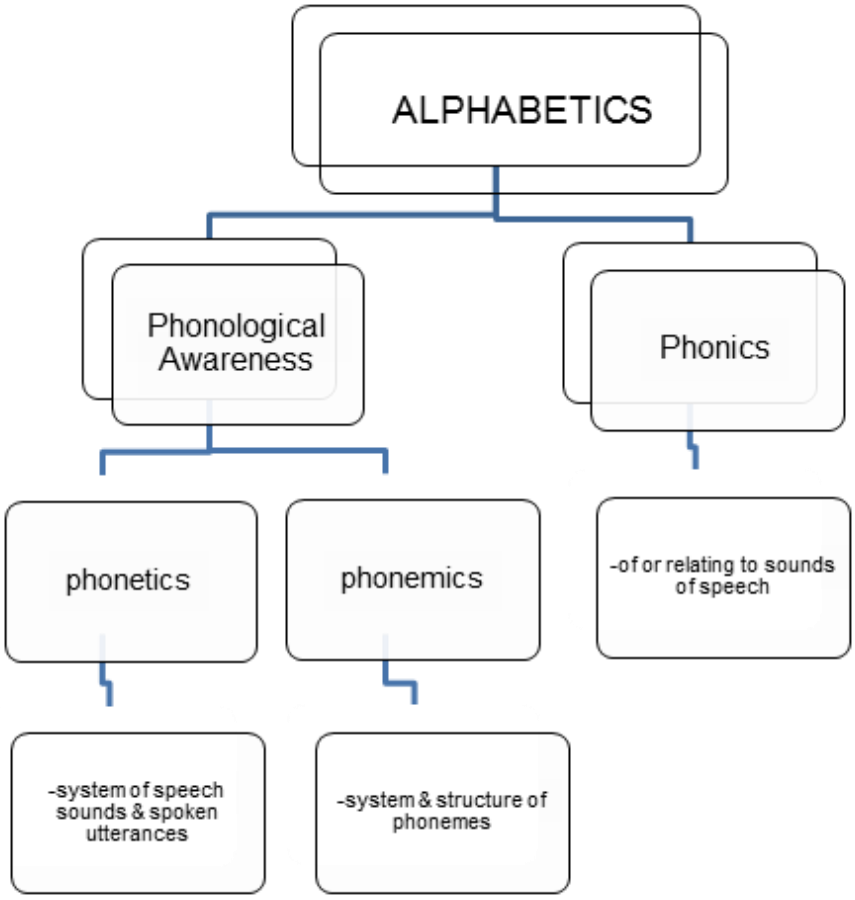

Figure 3. Alphabetics. The alphabetic system includes phonological components & phonics

Phonological awareness is the knowledge of the internal sound structure of spoken words; the science of speech sounds and has two components, which are *phonetics* and *phonemics*. *Phonetics* is the system of speech sounds and spoken utterances, while *phonetic* refers to spoken language or speech sounds. *Phonemics* is a branch of linguistic analysis that consists of the study of phonemes, and language structure in terms of phonemes. *Phonemic awareness* is the ability to manipulate sounds in oral language, such as in /b/ /a/ /t/, for the word *bat*. Moreover, *phonics* has two separate meanings. One meaning refers to the knowledge of the correspondence between letters and sounds. The other refers to a beginner reading method that teaches the phonetic value of letters and how to pronounce each

letter. *Phonology* refers to speech sounds, as relating to the phonetics and phonemics of a language.

Additionally, when learners cannot distinguish between the individual sounds that make up a word they may lack phonemic awareness skills. As mentioned, although older learners seldom fall into this category, some do (McShane, 2005). *Phonemes* are the smallest units of spoken language corresponding to written forms. The written forms are *graphemes*. Similarly, each grapheme has a sound associated with it (phoneme). A *grapheme* is a letter, such as "d", for example; and the *phoneme* is the representative sound made when the grapheme /d/ is spoken. There are 41 phonemes in the English language. When blended together, phonemes create syllables and words (National Reading Panel, 2000; Rayner et al., 2001; Wren, 2001). The following blended graphemes represent one corresponding phoneme: *SH, CH, EA,* IGH, as in **sh**ip, **ch**ip, **ea**t, h**igh.** Moreover, a single letter with corresponding phonemes may represent graphemes, such as /F/ /A/ /T/, representing the word *fat.*

Learners who cannot say the letters of the alphabet, their corresponding phonetic values, or blend several letters written in sequences, such as */bl/-/en/-/d/* to say the word *blend*, may lack phonemic awareness. These learners need to be able to blend a string of individual letter-sounds that make up a word in order to read fluently. If they cannot, the teacher may need to assess for learner phonemic abilities. Teachers cannot assume, however, that all L2 learners lack phonemic awareness skills, because some learners may rather lack sufficient vocabulary knowledge. Older learners who may fall into this category of lacking sufficient phonemic awareness skill are non-readers (those who have no reading proficiency), beginners, or intermediate readers (McShane, 2005, pp. 34-36). McShane (2005) suggests the following guidelines when assessing for phonemic awareness skills:

- *Phoneme isolation*, which requires recognizing individual sounds in words, for example, "Tell me the first sound in paste." (/p/)
- *Phoneme identity*, which requires recognizing the common sound in different words. For example, "Tell me the sound that is the same in bike, boy, and bell." (/b/)
- *Phoneme categorization*, which requires recognizing the word with the odd sound in a sequence of three or four words, for example, "Which word does not belong? bus, bun, rug." (rug)
- *Phoneme blending*, which requires listening to a sequence of separately spoken sounds and combining them to form a

recognizable word. For example, “What word is /s/ /k/ /u/ /l/?” (school)

- *Phoneme segmentation*, which requires breaking a word into its sounds by tapping out or counting the sounds or by pronouncing and positioning a marker for each sound. For example, “How many phonemes are there in ship?” (three: /sh/ /i/ /p/)
- *Phoneme deletion*, which requires recognizing which word remains, when a specified phoneme is removed. For example, “What is smile without the /s/?’ (mile)” (McShane, 2005, pp. 34-35)

To give an informal sample assessment of learners’ ability to perceive, hear and say individual phonemic sounds educators should assess larger phonological units and syllables rather than phonemes. The educator should ask the student to produce new words orally by *syllable deletion, phoneme deletion, phoneme segmentation, and phoneme blending.* To do this, learners should say the answers, after the teacher first asks questions, for example, as in the following:

Say *dislike*. Now say it again but don’t say /dis/. (**like**) Say *lake*. Now say it again but don’t say /l/. (**ake**) Say *sport*. Now say it again but don’t say /p/. (**sort**); Break each word apart and say each sound in order—*to* (/t/-/o/); *cat* (/c/-/a/-/t/); The teacher will say, “I will say the sounds in a word. After that, you are to tell me the word that I said”, /s/ - /at/ (**sat**), /t/ - /op/ (**top**), /f/ - /u/ - /n/ (**fun**) (adapted from McShane, 2005, p. 36).

To find out which older learner needs phonemic intervention McShane (2005) advised to,

> Assess skills informally by asking learners to perform one or more of the tasks identified by the National Reading Panel: phoneme isolation, phoneme identity, phoneme categorization, phoneme blending, phoneme segmentation, and phoneme deletion (NICHD, 2000, p. 2–10). (as cited in McShane, 2005, p. 36)

Morphemes are the smallest units of meaning. Furthermore, morphology involves recognizing and learning words. In language, it is the study and description of a word formation such as the inflection, derivation, and compounding. Research indicates that the “awareness of the morphological structure of words correlates to students’ vocabulary knowledge as well as their reading comprehension” (National Institute for Literacy, 2007, p. 9). When learners understand morphological units such as

from Anglo-Saxon, Latin, and Greek morphemes, affixes, root words, compound words, and function words they can begin to view and manipulate word parts, which can help them recognize complex words (National Institute for Literacy, 2007; National Reading Panel, 2000). Morphological knowledge helps learners divide simple and multisyllabic words into parts for decoding them into meaningful parts. Content area educators should teach morphological elements that are relevant to their field of discipline for content vocabulary (National Institute for Literacy, 2007; Torgesen et al., 2007).

4.1.1 Phonics instruction

There are several different instructional approaches to teaching phonics, such as *Whole Language* (and *whole-word*) *Instructional* Approach and *Phonics Instructional* Approach. Phonics instructional approaches include: synthetic phonics, analytic phonics, embedded phonics, analogy phonics, onset-rime phonics, and phonics through spelling. The focus is on teaching learners how, independently to identify and sound-out both letters and their corresponding sounds, and how to use this knowledge to read words. The *Whole Language Instructional* Approach focus is a meaning based-instruction, rather than individual letter-sound instruction. Those who adhere to it propose that learning to read occurs by using whole words and comprehensible texts. It is not systematic, but includes instruction on-a-needs basis, with little or no instruction on how to blend letters (National Reading Panel, 2000). Whole Language and Whole-Word Approaches are valid in some instances for teaching L2 learners; nevertheless, this study emphasizes the Phonics Instructional Approach. Conversely, the National Reading Panel (2000) research indicates Whole-Word Approaches gave small effects for word-reading and reading comprehension (pp. 2–90-2–92; Rayner et al., 2001). Systematic phonics instruction has been shown to give greater positive effects for decoding, word-reading, and reading comprehension for children who receive this instruction before third grade (National Reading Panel, 2000, pp. 2–89-2–92).

Phonics instructional approaches are for elementary learners and beginners. National Reading Panel (2000) reported on studies comparing explicitly taught systematic phonics instruction with non-phonics approaches, such as phonics instruction compared to Whole-Word and Whole Language instruction. They explained findings from meta-analyses conducted, which showed that various types of systematic phonics approaches are significantly more effective than non-phonics instructional

approaches for improving independent reading growth (National Reading Panel, 2000, pp. 2–92-2–93). Furthermore, some adolescents do not fully develop phonemic awareness; therefore, when they encounter unknown words, they do not know how to decode them. When they know all the phonemic sound units that correspond to spoken letters and words, they will have an awareness of the phonemic principle, and should therefore be able to read letters, syllables, words, and sentences. Figure 4 represents the two approaches to reading instruction and their associative components.

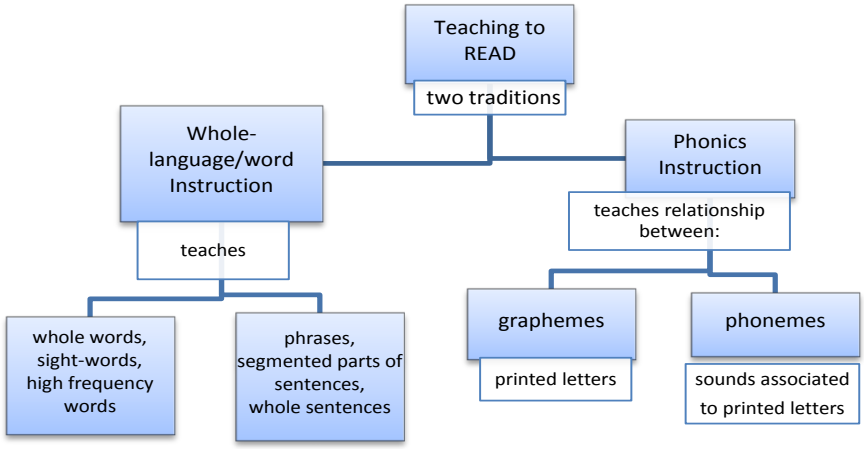

Figure 4. Traditional reading approaches. Two language teaching paradigms

Several reasons are worth noting as to why it is important that learners need to know the phonetic values of the words they will learn to read, as opposed to relying on guessing words typical of the *Whole Language* Approach. When learners know the letter-sound correspondences, their fluency in word reading improves, and they are independently more able to figure out or decode unknown words. Learners who memorize and only know sight words or high-frequency words will not be able to sound-out newly encountered words, and "when the conditions are right", they will read with difficulty (Wren, 2001, p. 44).

5 Strategy instruction

Reading strategies provide effective learning tools that aid students. They inform learners of ways to look at and think about various texts, as realized by proficient readers who intentionally engage in strategic activities while reading. Successful readers actively engage with texts, and use strategies that are invisible to the non-strategic reader (Antonacci & O'Callaghan, 2011; Edmonds, et al, 2009; McShane, 2005). As McShane (2005) recounted, "The process is mostly invisible, and efficient readers may appear to be simply "running their eyes over the text, . . . [And] It isn't obvious that a lot of strategic thinking is going on" (p. 74). Even so, many older learners are not aware that reading strategies exist (McShane, 2005). As strategies aid learners with reading, they also support learners' executive control of thinking, organizing, and memorizing, etc. (National Reading Panel, 2000). Furthermore, some strategies are for doing before, during, and/or after reading, and some are effective doing collaboratively with a partner. Moreover, if it is expected to decrease the high percentage of struggling adolescent readers, educators ought to become skillful in and "have a firm grasp" on instructional strategies, and implement cognitive strategy instruction for reading comprehension (National Reading Panel, 2000, p. 4–119).

Reading and learning strategies may improve reading and learning skills as educators explicitly teach learners how and when to use them individually and with peers. Studies show that combining the use of strategies more effectively facilitates reading comprehension. Research indicates multiple strategy approaches to be more effective than single strategy use, and that they are more effective when combined with collaborative learning (Kamil, 2003; Nassaji, 2011; National Reading Panel, 2000; Slavin et al., 2008b; Torgesen et al., 2007). The National Reading Panel (2000) observed how multiple strategy instruction improves reading comprehension when teachers model the strategies and provide scaffolding to learners who can at least decode text. The National Reading Panel (2000) explained that when multiple strategy instruction involving teacher modeling and guiding poor readers who are adequate decoders is "consistent with socially mediated learning theory" proposed by Vygotsky (1978) and Pressley and McCormick (1995) (as cited in National Reading Panel, 2000, p. 4–47).

Torgesen et al. (2007) support explicit instruction of reading comprehension strategies for improving reading comprehension and

directing students "to use specific cognitive strategies or to reason strategically" when comprehension fails them (p. 17). Antonacci and O'Callaghan (2011) outlined the following useful and common cognitive strategies that proficient readers employ for reading comprehension, such as:

> (1) setting a purpose for reading and writing, (2) activating and using prior knowledge and experiences to understand the text or write by making connections, (3) previewing texts before reading, (4) asking questions before, during, and after reading and writing, (5) figuring out unknown words, (6) using the text structure and its features for understanding learning, (7) using talk and writing to explore one's own understanding of specific topics, (8) categorizing strategies, (9) reviewing and recalling information from text and the like. (pp. 2-3)

Moreover, the National Reading Panel (2000) cited studies separately observed by Durkin (1979) and Duffy, Lanier, and Roehler (1980), which indicated that there are educators who scarcely spend a significant amount of time teaching reading instruction and strategies at or after grade four (as cited in National Reading Panel, 2000, p. 4–40). Their studies revealed that out of 4,469 minutes of reading instruction, "only 20 minutes of comprehension instruction was observed" (National Reading Panel, 2000, p. 4–41).

Torgesen et al. (2007) reported that students who used "strategy instruction made superior gains in comprehension performance over their peers who received story content or traditional basal instruction" (as cited in Torgesen et al., 2007, p. 20). An analysis of 203 studies of comprehension instruction, gave suggestions of eight effective strategies for *at risk readers*, which Kamil (2003) identified as *comprehension monitoring, cooperative learning, graphic organizers, knowledge of components of story structures, question-answering, question-generating, summarization,* and the use of *multiple strategies* (pp. 13-14; Torgesen et al., 2007).

A corpus of research gives indications that educators ought to teach a variety of strategies. The following is a list of several commonly employed strategies: *prediction strategy, making inferences; paraphrasing, paragraph-shrinking, summarizing, retelling, questioning and answering, think-alouds or self-talk, seeking clarifications, writing summaries, note-taking during reading, locating main ideas* and *major plot lines, gaining meaning from pre-viewing text, such as titles, subtitles, headings, visual*

features, such as *art, illustrations, etc.; using graphic organizers; comprehension monitoring, skimming, scanning,* and *recognizing the various text structures (or formats),* such as *expository, narrative, and informational texts* (Antonacci & O'Callaghan, 2011; Berman & Biancarosa, 2005; Edmonds et al., 2009; Fuchs et al., 2001; Kamil, 2003; Kamil et al., 2008; O'Malley & Chamot, 1990, as cited in Mitchell & Myles, 2004, pp. 105-107; Peterson et al., 2000). Saskatchewan Learning (2004) has an abundant supply of reading strategy resources readily available from which educators may use (pp. 95-104).

Many struggling adolescent readers may not be explicitly aware of strategies for reading, and thus tend to use them less than skillful readers (Peterson et al., 2000). Thus, teachers should explicitly teach them to struggling readers and secondary-level students, because strong evidence supports reading comprehension strategy instruction for older learners (Antonacci, & O'Callaghan, 2011; Berman & Biancarosa, 2005; Edmonds et al., 2009; Fuchs et al., 2001; Kamil, 2003; Kamil et al., 2008; National Reading Panel, 2000; Slavin et al., 2008; Torgesen et al., 2007).

When introducing a specific strategy to learners, an educator should start out by clearly describing it, and explaining why it is important, and when it is appropriate to use. Then after the teacher models the strategy by showing the students how to use it, but learners need to have time in class to practice the strategies before reading (National Institute for Literacy, 2007). Additionally, Grabe recommended educators use the learners' first language when teaching the use of strategies (as cited in Nassaji, 2011).

As teachers scaffold student strategy learning in the classroom, they can help students transfer their strategy use to content area reading assignments (Torgesen et al., 2007). Some strategies are repeated throughout this thesis however, because they are strategies that are continuously salient from multiple research data. Following are several more strategies: *student guided practice; self-talk during reading; questioning text; thinking about (WH questions) who, what, when, where, why,* or *how; allowing reading* and *discussion groups* or *peer reading partners; paraphrasing* and *summary writing* or *telling* (to a peer); *relating prior knowledge;* and *making predictions* about what an upcoming text may be about (Cummins, 2011; Fuchs et al., 2001; McKenna & Walpole, 2006; Peterson et al., 2000, pp. 17-18). Following are examples of pre-reading exercises for preparing learners to use strategies prior to reading a text, strategies such as when to *activate prior knowledge*; *thinking about the*

"Wh" questions; creating mental images; using summaries, and *talking to self or classmates about the text*.

Before reading, the teacher shows students how to use the strategy of connecting prior knowledge and making predictions about the content of the text (see discussion in section 5.1). During reading, teachers encourage learners to mentally use self-talk, ask questions about the text, such as the "Wh" questions. For example, instruct the students to continuously think during reading, questions such as, *Who* is it about? *What* is going on? *Where* is the setting?, etc. Furthermore, the teacher can give out a worksheet displaying a pre-reading exercise, such as one with space where learners can write his or her thoughts during reading. Each section has a word and question mark, such as What?, When?, Where?, Why?, Who?, How? Additionally, as students work with a peer, they can practice "interpreting meaning by constructing mental images and summaries, asking [each other] questions, and seeking clarifications . . . (Pressley, 1999)" (as cited in Peterson et al., 2000, p. 17).

5.1 Background knowledge, prediction, and inference strategies

Pre-reading exercises, prediction, and inference strategy instruction helps learners begin to orient their thinking about texts they are about to read; prepares them to think in ways that facilitate reading comprehension; and shows them tools they can use while reading—for thinking about and engaging with text. Some readers find it difficult to relate to what they already know to new reading experiences. However, drawing upon learner background knowledge, pre-reading and prediction strategies help learners think about what they already know about a subject that may slightly or significantly relate to the reading they are about to encounter (Antonacci, & O'Callaghan, 2011; Fuchs et al., 2001; Nassaji, 2001). Good readers are subconsciously drawing information from their prior knowledge while they are actively engaging in comprehending texts (McShane, 2005). Consequently, learners' background knowledge and becoming familiar with new vocabulary and concepts relating to the text may also contribute to supporting reading comprehension, which may help both L1 and L2 struggling readers (Antonacci, 2011; Berman & Biancarosa, 2005; Edmonds et al., 2009; Fuchs et al., 2001; Kamil et al., 2008; Nassaji, 2011; Rayner et al., 2001; Slavin et al., 2008).

When introducing new reading assignments, connecting L2 learners' prior knowledge to newly introduced text should activate their thinking in

ways that help them make connections about something related to the text before they read it. Pre-reading strategies should be those that help learners draw upon what they already know, because it facilitates learner understanding of different subjects and difficult reading assignments. Teachers should show learners how to relate and think about their own background knowledge for understanding an upcoming reading task. Additionally, teachers can prepare learners to draw upon their own knowledge for understanding text that may contain unknown subjects, concepts, and vocabulary.

Using pre-reading strategies supports the activation of learners' prior knowledge (Torgesen et al., 2007). A study on the effects of background knowledge and general verbal proficiency on learner ability to comprehend a text was administered to third, fifth, and seventh grade learners in Germany (as cited in Torgesen et al., 2007, p. 56). Results indicate that even when learners have low verbal ability, if they have a sufficient amount of background knowledge, they can comprehend text just as well as other students who have general verbal abilities and have equal knowledge of the subject.

Pre-reading may entail using introductory items that may activate student memory, thinking, and understanding, for example, such as instruction that uses visuals, short video clips, musical clips, and PowerPoint presentations, which may contain direct links to a variety of sources on the internet. Additionally, it can be useful to allow discussions; to provide maps, sample grammar items; and to introduce new or difficult vocabulary, including mapping words, definitions, cognates, or using graphic and semantic organizers; and giving hints that help learners relate to or take small steps with what they do know, toward what they will need to know about their required reading. For example, when a science teacher introduces a chapter containing difficult vocabulary, a pre-reading introduction of difficult vocabulary words and concepts can help prepare learners to understand more about what they are about to read from a complex science article or book chapter (National Reading Panel, 2000). Activities around the new vocabulary can be helpful, such as student discussions involving peer-work, as they negotiate word meanings or play word games.

Pre-reading strategies help learners think about text in various ways, and collaborate with peers. *Prediction* is a strategy that helps students monitor their reading and activate background knowledge. When educators carefully choose illustrations, they have the potential to help activate

student discussions, think about content knowledge and background knowledge, all of which can influence comprehension and learner abilities to *make inferences* (Torgesen et al., 2007). Teachers begin by orienting students to think about what they are about to read by first introducing the strategy to the students. The teacher can use prediction strategy by using visuals, for example. While students are reading, they can also use prediction strategy. They may read a paragraph, for example, predict what may happen next in the story, then continue to read, and check to see if their prediction was correct or needs revising. This strategy is also effective when learners do it in collaboration with a peer or a small group of peers.

The National Reading Panel (2000) suggested the following four reading strategies:

1. *Student awareness*
    a. Teacher provides students with enough information to help learners know why they are about to read a particular text.
2. *Prediction strategy*
    a. Use with visuals
        i. Portrait, photograph, clip art [See Figure 6: Curry Tornado over Kansas]
    b. Use with text
        i. Paragraphs, columns, half a page, chapter of a book
        ii. Before reading half, then after half has been read
        iii. Check prediction; if it is not correct, revise it; if correct, continue reading
3. *Text overview*
    a. Initially, explicitly teach, and give students time in class
    b. Direct student attention to:
        i. titles, subtitles, pictures, graphs, art, charts
4. *Collaborative discussions*
    a. teacher and students, and/or students with peers

Visuals and graphics that stimulate students' thinking are effective ways of preparing learners for a reading task. Visuals should help learners draw from their own background knowledge. Furthermore, using a variety of graphics is an effective tool for supporting learning for both special needs learners as well as high achievers. The result of studies indicate that using a combination of teaching content-subject material and graphic organizers for pretest memory, may be more effective than control groups receiving traditional instruction (Torgesen et al., 2007, pp. 59-60).

The reading teacher may explicitly teach prediction strategy by giving learners an article or short story, for example. The teacher instructs students to make predictions by looking at all possible obvious features provided in the text, such as, the text title, subtitles, pictures, graphics, and illustrations , etc. (Antonacci & O'Callaghan, 2011; Fuchs et al., 2001; Nassaji, 2011). Before reading, the learners receive a worksheet entitled, *Predicting, confirming,* or *revising predictions*, which have three simple instructions, as Figure 5 illustrates.

Directions: Make predictions about an article or short story, as follows:

1. Before reading the text, make a prediction based on what you know or see from the text, title, subtitle, captions, pictures, etc. Write in the lines below.
2. Explain your prediction and a reason why you chose it.
3. Begin reading, and during reading pause to think about whether to confirm or revise your predictions based on your new understanding of the text.

Before Reading

Prediction: _____

Give a reason why you predict this _____

_____

During Reading

Prediction confirmed? _____ Yes _____ No

Revised Prediction_____

_____

During Reading

Prediction confirmed? _____ Yes _____ No

Revised Prediction _____

_____

Figure 5. Predictions: Making, confirming, & revising predictions about upcoming text content (adapted from Virginia Department of Education, 2008).

Teachers encourage students to use the worksheet during reading. Students work on their worksheets independently or with a peer (this depends on teacher choice and learner age or reading level). After students have read the directions, the teacher instructs them to look at all the obvious features of the text. After a reasonable amount of time, students write their pre-reading prediction about what they think the text will be. The teacher instructs students to return to the worksheet while they are reading a portion of the text, in order to confirm or revise their prediction, and to make a new prediction for the next portion of reading. Depending on the length of the text, learners will repeat the process until they have completed their reading. During peer reading, students discuss and write down their predictions.

Another prediction strategy is the *inference strategy*. Before the lesson, the teacher may introduce the inferencing strategy by creating a worksheet perhaps titled, "*I See, therefore I Infer*". Alternatively, the teacher can show it as a slide presentation on the overhead screen. Additionally, another way to introduce the inferencing strategy, for example, is with visual aids, such as a PowerPoint presentation. The teacher introduces first only the title of the short story, for example, *The Luncheon*, by W. Somerset Maugham, which the first part of Figure 6 illustrates. This prompts learners by helping them begin to think about what the contents of the text might be. Next, the teacher displays a graphic illustration, which should stimulate learners to begin *guessing* about their own ideas of possible story details, and the meanings they infer. For example, the students will try to predict the plot, character traits, or setting, etc. The illustration should help L2 learners imagine the setting of the story, and should be a stimulus that facilitates engaging with classmates in collaborative discussions about what they infer, based on what they see, think, and predict. For example, after learners see the title and author in the visual aid, they may not have known the meaning of the word *luncheon* until after they have seen the next visual of a couple having lunch. After displaying the second slide, a class or peer-pair discussion should ensue. After discussions and negotiations about inferred meanings, the teacher explains how these are exercises to help them understand the *prediction* and *inferencing strategies*, and that they ought to use them before reading many forms of text. Hence, this is a good strategy for introducing L2 learners to new unfamiliar reading tasks.

Prediction strategy helps learners before and during reading. Older students will encounter concepts, historically or culturally embedded information, or underlying meanings not explicitly stated in texts. They will need to infer meaning from that which they gather while reading, and from

any (background) information that they already know, such as cultural differences, historical or current events. Examples are such as from the Great Depression, major wars, or societal crises. Another PowerPoint slide is an example that shows a portrait. The teacher reveals the portrait, which is the second part of Figure 6 of *The Tornado over Kansas*. By repeating the steps mentioned above, a class discussion ensues; then the teacher displays the text under the illustration, one sentence at a time; and asks students relevant questions to sustain thinking about contents, and allowing negotiating and inferring meaning.

The Luncheon, by W. Somerset Maugham

PRE READING TASKS:

1) PREDICTING- SEGJA FYRIR UM, SPÁ

2) INFERENCING- ÁLYKTUN

Pre reading Exercise

Look at the picture [above]!

What do you see? Think about *who, what, when, where, why or how*

Are the animals more important than the wagon?

What do you think it is about?

Now fill-out the "I SEE & I INFER" worksheet!

Figure 6. Pre-reading exercise. Making predictions for the story The Luncheon, by W. Somerset Maugham. Portrait, John Steuart Curry (1897-1946). Tornado Over Kansas. Muskegon, Kansas: Muskegon Art Museum

Doing these strategies in class helps serve as a model for students, so they learn to transfer the same strategy use to their private reading experiences.

5.2 Other strategies

All adolescents, including Icelandic learners in upper primary through upper secondary–grades need to learn reading skills. L2 learners need reading skills in preparation for comprehending reading material they will encounter in secondary school, and may encounter beyond secondary school. Learners face challenges when their reading strategies, fluency, vocabulary knowledge, or other language components are not sufficient for comprehending academic and expository texts required for understanding texts in other domains, such as science, social sciences, literature, or history.

Multi-strategy use for understanding text structures help increase learner understanding, thus facilitate reading. While learners are reading independently or with a peer, teachers can encourage them to use various strategies or a selection of multi-strategies (Edmonds et al., 2009; Fuchs et al., 2001; Kamil, 2003; Slavin & Cheung, 2004; Slavin et al., 2008; Stevens, 2003; Torgesen et al., 2007). Some are for specific types of text structure, such as expository, informative, narrative, fiction/nonfiction, compare/contrast, and problem/solution. Particular style elements of each text structure are typical, and can be facilitative when learners are aware of each. Expository text structures are not the same as narrative texts. The following are the most common *expository text* structures: cause and effect, problem and solution, comparison and contrast, chronological order or sequence, concept ideas with examples, and propositions with support. When learners have not learned to transfer to content area text reading strategies they use with narrative texts, educators should explicitly teach them.

Questioning is a strategy, such as self-questioning. This is also effective when working with a peer, by asking one another the same questions. Learners answer the "*wh"* and *how questions*. Again, educators teach learners how to use this strategy, and/or use worksheets to benefit visual learners, for example.

Reciprocal Teaching Strategy begins after the teacher models the steps. Learners then use the following strategies, usually with a peer:

- *Prediction*, of headings, subheadings, visual arts, graphs, charts
- *Read*, the sentence, paragraph, column, or story alone or together
- *Question*, generate questions or teacher provides a list, about text

- *Clarify*, unknown words, difficult text, meanings, such as context, historical or cultural meanings
- *Summarize*, major points, main ideas, plot, important information
- *Summarize* or *paraphrase* short sections at a time, either verbally or by writing it as they are reading with a peer. (Fuchs et al., 2001; Saskatchewan Learning, 2004, p. 99; Torgesen et al., 2007)

To provide scaffolding, educators should model strategy use, give time in class to use them, and monitor practice. Kamil (2003) stated that oftentimes learners lack domain knowledge, and therefore apply strategies insufficiently (Kamil, 2003). This is one reason they need direct instruction and modeling of them. Afterwards, teachers should allow learners time to practice them. Later, students should be able to transfer using these strategies to using them on their own.

Strategies that help learners with unfamiliar vocabulary words may aid L2 learners' reading comprehension. When introducing a list of new vocabulary words, which learners will encounter during their required reading, for example, the teacher first chooses words from required reading, and divides them into lists; then the teacher distributes the lists either to peer-pairs or to small groups. Next, learners negotiate word meanings and share with one another what they already know about word meaning. Next, learners collaboratively work on creating a way to present the words by using them in context (Saskatchewan Learning, 2004, pp. 139-143). For example, students can make a PowerPoint presentation; create a short skit, songs, or poems, etc.,—impromptu or practiced for a short time. Other strategies are partner reading, retelling, paragraph-shrinking, skimming, scanning, and discovering the meaning of vocabulary by guessing from context (Antonacci & O'Callaghan, 2011, Edmonds et al., 2009; Fuchs et al., 2001; Kamil et al., 2008; McKenna & Walpole, 2006; Nassaji, 2001; National Reading Panel, 2000).

Research shows strong effects for explicit instruction of these metacognitive strategies for reading comprehension (Edmonds, et. al., 2009). Learner awareness and use of reading strategies and comprehension monitoring facilitates learner discovery of the various ways in which learners may become active participants in their own reading comprehension (Edmonds, et. al., 2009; National Reading Panel, 2000). When Edmonds, et. al. (2009) compared what good readers do to what poor readers do not do; results showed that poor readers were less strategic, while good readers used comprehension skills and strategies. Antonacci and O'Callaghan (2011) reported that skilled learners use

metacognitive strategies. Readers who use metacognitive strategies are thinking about their own thinking, learning, and abilities to comprehend texts. They use self-talk as they ask questions during reading; they plan, and they check and monitor their own understanding. When they cannot answer their own generated questions while reading, they re-read segments of the text. They know of the strategies that will help them when their understanding fails (Antonacci & O'Callaghan, 2011).

Mitchell and Myles (2004) distinguish three categories of general learning strategies posited by O'Malley and Chamot (1990), as Figure 7 lists them. These are not language learning, but general learning strategies.

Strategy classification	Strategy
Metacognitive strategies	Selective attention Planning Monitoring Evaluation
Cognitive strategies	Rehearsal Organization Inferencing Summarizing Deducing Imagery Transfer Elaboration
Social or affective strategies	Co-operation Questioning for clarification Self-talk

Figure 7. Learning strategies (adapted from O'Malley and Chamot, 1990, as cited in Mitchell & Myles, 2004, p. 106)

Although the metacognitive, cognitive, and social or affective strategies are general learning strategies, they are important for reading

comprehension improvement because research shows promising effectiveness (Mitchell & Myles, 2004; National Reading Panel, 2000).

General learning strategy approaches consider two cognitive dimensions worth mentioning here. They are the *Information-Processing Approach*, in which learners acquire skills and integrate them with complex procedures and *Analysis-Control Approach*, where cognitive control of *skill use* becomes beneficial for learner comprehension. They both involve strategy instruction for learning, and repetitive practice until automatization occurs. Both, *analyzed knowledge* and *cognitive control* are cognitive dimensions "associated with structuring and accessing knowledge [that] are necessary for higher cognitive operations", and help to explain "how language is transformed into a cognitive tool" (Hamers & Blanc, 2000, p. 117).

The *Information-Processing* models explain how learners establish procedures, and integrate elements of learning. Anderson's *Adaptive Control of Thought* (ACT) model (1983, 1985) is an *Information-Processing* model, which cognitive psychologists have developed. (An explanation providing more details of this model is in section 2 pages 20-23 of this essay). O'Malley and Chamot (1990) apply this learning model to second language strategy learning (as cited in Mitchell & Myles, 2004, p. 99). After reading a short story, for example, learners use the strategy of summarizing or retelling it to a peer. As learners do this strategy repetitively, the strategy becomes an automatic response during reading. Skilled readers use multiple and selective strategies that fit to their learning and reading needs (Antonacci & O'Callaghan, 2011; Mitchell & Myles, 2004).

Maheady et al., (2006) suggested four collaborative peer-reading models designed to assist students with their reading comprehension. They are *Cooperative Integrated Reading and Composition (CIRC), Reciprocal Teaching, ClassWide Peer Tutoring (CWPT),* and *Peer Assisted Learning Strategies (PALS)* (Fuchs et al., 2001; Slavin et al., 2005; Slavin et al., 2008b). PALS is an adaptation and combination of CWPT, CIRC, and Reciprocal Teaching (Fuchs et al., 1997; Fuchs et al., 2001). Studies of PALS gave potentially positive effects on reading comprehension, for elementary students (U.S. Department of Education, 2012, June).

Cooperative Integrated Reading and Composition reading model is where small groups work together after the teacher introduces daily lessons on, 1) basal instruction, and 2) comprehension and metacognitive strategies. This is where students begin to learn about their own learning. Explicit teaching occurs during reading lessons. Students are in mixed-ability groups, and work together on basal items as well as on lesson content.

Group activities include *oral reading*, where students work in pairs. One student reads while the other listens. Students collaborate as they negotiate meaning, make corrections, and participate in *decoding* activities to manipulate letter-to-correct-sound relationships (for saying words correctly). They discuss and decide on *story structure*; use prediction strategy, for understanding meaning; and they summarize the story (for more advanced readers) or small portions of text (when learners are at beginner-levels of reading). Motivation is encouraged with a shared reward system. Rewards help also so that students will collaborate, and understand both group participation and individual responsibility. However, Slavin et al. (2011) cited moderate evidence of effectiveness for this program. Conversely, other studies indicate the level of evidence gives promising effects for improving reading comprehension (Madden, 2004; U.S. Department of Education, 2010).

The Reciprocal Teaching model is for use when students are working on expository text and comprehension strategies. Strategies may include any of the following: question generation, summarization, clarification, and prediction. First, the teacher models the use of specific strategies to use during their peer-pair reading. As they read each paragraph, they generate questions, summarize text content meaning, clarify difficult vocabulary items, and use prediction strategy. The prediction strategy used is *guessing*. Learners guess word meaning, while continuing reading without stopping to look-up words, and trying to see if surrounding text content may offer hints for guessing the unknown vocabulary words. The teacher will first model the strategies, by reading the first paragraph aloud. Then students will practice the strategies as they read the subsequent paragraphs. Interactive communication is encouraged between the teacher and the students, as well as amongst peers. The teacher allows open dialogue to help with clarifications, elaborations, and explanations. Gradually, the shifting of responsibility transfers from the teacher to the students, as they make use of strategies in collaborative dialogue with one another.

ClassWide Peer Tutoring (CWPT) model occurs three times a week, for 40 minutes each time. Students work in pairs, as one reads aloud for five minutes, the other student listens, corrects errors, asks questions, such as, the "*Wh" or How* questions. Pairs reverse roles for the next five minutes (Fuchs et al., 2001; Maheady, L., Mallette, B., & Harper, G. F., 2006).

Peer Assisted Learning Strategies (PALS) program is a method that was developed as a modification of and by combining several components of all three above methods—CWPT, CIRC, and Reciprocal Teaching activities. It

involves structured activities, frequent verbal interaction, and feedback, such as in tutor-tutee reciprocity. This means that both students take turns participating in the role as a tutor and a tutee. During reading, the tutor makes comments by giving appropriate feedback to the tutee. The learners have opportunities to respond, because learning is "enhanced when students receive appropriate feedback" (Fuchs et al., 2001, p. 16). Finally, learner pairs switch roles and repeat the same procedures as the newly designated tutee reads. Research documents potential effectiveness for improving reading comprehension with the use of frequent verbal interaction, feedback, learner opportunities to respond, and reciprocity roles (Chung & Slavin, 2005; Fuchs et al., 2001; Maheady et al., 2006; Slavin et al., 2011). Consequently, Slavin et al. (2011) cited strong evidence of effectiveness for this program.

6 Cognitive development

One goal of learning to read is to develop cognitively, so that after learners progress they are eventually able to grasp abstract concepts, and activate, what is known as higher-order thinking and understanding. Cognition is an important factor concerning developing children and adolescents. Language aids their cognitive abilities for processing and organizing thinking and reading (Hamers & Blanc, 2000). In essence, language becomes a tool for organizing complex information (Hamers & Blanc, 2000, pp. 116-123). Learning or cognitive and metacognitive strategy use helps learners with comprehending during reading (Antonacci & O'Callaghan, 2011). Educators can help their learners develop language as a cognitive tool for organizing their thoughts and learning activities by helping learners develop the cognitive function of language (Hamers & Blanc, 2000, pp. 112-119). This function "refers to a general psychological process by which the child appropriates language as an organiser of knowledge, i.e. in classifying, forming hierarchies, inferencing, etc." (p. 117). Furthermore, Hamers and Blanc (2000) eloquently posited, "The extent to which adults, in their interactions with a child, manipulate language in problem-solving enables him to develop language in this function to a greater or lesser degree" (pp. 118-119). Thus, educators can help shape learners' abilities to develop higher-order knowledge, by facilitating language development for learners. As learners master linguistic knowledge and use, for example by developing

language as a means for communicating abstract conceptual knowledge, "linguistic form and cognitive function" are constantly interacting between one another and shaping "both the cognitive and linguistic development of the child" (Hamers & Blanc, 2000, p. 115).

Cognitive development shapes human knowledge, memory, and critical thinking, such as reasoning, reflection, evaluation, problem solving, judgment, and decision-making. During early reading development, learners use cognitively low-level texts, which do not require skills necessary for thinking about complex abstract concepts. Advanced-levels of reading contain higher-order processes, such as those that are "used in creating interpretation and representation of a text, including inferential and contextual processes, schema activation, and executive control processes [including] . . . cognitive concepts, such as automaticity, associative learning, attention and noticing, inferencing, and explicit and implicit learning" (Nassaji, 2011, p. 174). This includes thinking about the contents that texts reveal, such as those which are not always explicit, but ambiguous, requiring learners to use inferencing skills, for understanding abstract concepts and meanings.

Literacy in educational settings attempt to facilitate the transition of children's contextual learning of linguistic knowledge and skills to use language as a cognitive organizer for decontextualized abstract thinking (Hamers & Blanc, 2000, p. 121). Hamers and Blanc (2000) advanced the notion of others who indicated that pre-school age children who "learned the purposes and mechanics of decontextualised language are the ones who have the greatest advantage in the attainment of literacy at school" (as cited in Hamers & Blanc, 2000, p. 120).

The more a person's short-term memory and attention are used to focus on the structural and functional forms of language during reading, for example decoding or sounding-out a word, or trying to determine the meaning of the words in a text, etc., the less one's cognitive abilities are available for processing and producing higher-order thinking skills, such as thinking, communicating, or writing about the concepts or abstract ideas. Furthermore, when abstract thinking skills develop, the learner is able to transfer L1 cognitive thinking skills to his or her L2 learning experiences (Cummins, 1979b; Cummins, 2011; Hamers & Blanc, 2000; Mitchell & Myles, 2004).

Furthermore, when early childhood experiences include rich L1 language environments, the child's L1 has the potential to develop as a cognitive organizer. This occurs as interactive context-embedded, communicative

exchanges take place with someone more competent in the language. Exchanges occur by communicating with utterances, gesturing, directing by pointing, for instance, guiding thinking, understanding, and interpretations during language development. It also involves experiences with others, such as reading to the child, interacting with books, pictures, and other print material, and expressing and speaking *about* language. As more competent others use and model decontextualized oral language around those who are less competent, the learner begins to understand more context-reduced language and concepts. The learner's capacity to understand decontextualized communicative exchanges should increase as communication with less reliance on situational contexts decreases. In other words, development occurs as the "transmission of the meaning depends on linguistic rather than situational information" (Hamers & Blanc, 2000, p. 120). This is cognitive development that leads learners to understand and communicate context-reduced concepts, which prepares them for the more complex task of reading and writing (Hamers & Blanc, 2000, p. 120).

6.1 Learning in social settings

Rogoff (1990) cited several studies, which suggest significant cognitive benefits ensue from communicative activities during learning exchanges such as cooperative peer interactions, collaborative decision-making, discussions, reasoning, memorizing, and negotiating. Principles of learning in social contexts substantiate the process of socialization in learning, whereby cognitive development occurs as participants engage in interaction. *Social learning theory* suggests humans learning in social contexts need guidance at first, by a more capable person within the novice's *Zone of Proximal Development*. More capable others, such as parents, caregivers, or peers regulate the learning of the novice as he or she advances from levels of capability to levels of possibilities, in addition to learning the skill of using language as a tool. This allows learners to internalize concepts while learning historical cultural guidelines and principles, from others who share ideas, knowledge, skills, or reasoning skills (Mitchell, & Myles, 2004; Rogoff, 1990).

During social interaction, people internalize new ideas, and the processing of those ideas help shape human understanding and thinking. The *Zone of Proximal Development* (ZPD), defined by Vygotsky (1978), is

> the difference between the child's developmental level as determined by independent problem solving and the higher

> level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers. (as cited in Mitchell & Myles, 2004, p. 196)

Moreover, it is positioning learners in social interactive contexts with others, such as with peers who are at least slightly more knowledgeable, and who may contribute additions to one another's cognitive development.

A factor contributing to productive peer learning interaction is the role of equality of status between peers. Some evidence suggests that peers beyond the age of seven are more likely to interact freely with one another (Rogoff, 1990, pp. 174-178), rather than an adult. Studies conducted with children under the age of seven and their mothers or teachers indicated an impediment of unequal participation and less likelihood of a facilitated balanced discussion (Rogoff, 1990, pp. 174-175). This postulation emphasizes the differing of role status in interaction between adults with children and children with their peers. In studies, however, involving adult-child interaction, and child and adolescent-peer interaction, Piaget promoted equal power relations, such as peers learning from and communicating with one another more so than the unequal power relations or role status in adult–child relations. His view emphasizes the benefits of cognitive restructuring that occurs between peers of equal status (as cited in Rogoff, 1990, pp. 147, 175). Vygotsky posited that peers preferably ought to be equal in power status, but unequal in skills and understanding (p. 148). During collaborative peer communicative settings, interactive activities can be a means by which adolescents freely exchange ideas, share perspectives, promote motivation, cognitively develop, negotiate meaning, partake in decision–making, and link new knowledge with already known knowledge.

Moreover, teachers may help improve reading comprehension by encouraging peer–reading partners and explicitly teaching metalinguistic and metacognitive awareness strategies. Collaborative learning encourages peer interaction and critical thinking, which enables scaffolding during learning (Antonacci & O'Callaghan, 2011; Fuchs et al., 2001; Nassaji, 2011; Rayner et al., 2001; Rogoff, 1990). Research indicates that peer–reading partners have significant potential to facilitate reading comprehension and cognitive development (Ellis, 2003; Lantolf, 1994; Lantolf, 2007; Mitchell & Myles, 2004; Rogoff, 1990; Slavin, 1995a; Stevens, 2003). Peer partners and collaborative reading models may facilitate reading for older students who already read in their first language but are less competent reading complex

L2 language texts (Slavin et al., 2008b). Slavin (1995a) and others reported studies indicating models of learning, where peer–partner learning environments have positive effects on learning and reading comprehension (Maheady et al., 2006; Slavin & Cheung, 2004; Steven, 2003). These involve sociocultural settings allowing for peer idea sharing, guiding, conflict resolution, collaborative learning, cognitive development, and the use of interpersonal skills (Donato & McCormick, 1994; Fuchs et al., 2000; Hamers & Blanc, 2000; Lantolf, 1994; Lantolf, 2007; Rogoff, 1990; Slavin, 1995a; Walpole & McKenna, 2007; Thürmann, 2010).

Central to learning are notions that the learners' own purposes and goals, knowledge, and meaning involve a social construction, through the processes of negotiation, evaluation, and transformation. Cambourne (2002) claimed that context, such as one's environment, and content—that which is being learned, and the learners' activities and goals—allow for socially constructing of meaning, while students are collaboratively interacting, negotiating and clarifying (student understanding and text meaning). Cognitive development occurs as learners collaboratively and actively engage in learning and text understanding. This is facilitated in language learning during collaboratively shared reading experiences, engaging in dialogue, and participating in the *negotiation of meaning* (deciding upon meanings, sharing perspectives, and helping one another understand vocabulary and concepts) (Mitchell & Myles, 2004, pp. 160, 167-169, 194-217; Rogoff, 1990). Learners try to negotiate understanding of unfamiliar vocabulary words, text content, context, text structure, and author intent (Cambourne, 2002, p. 44).

Learners are involved in constructing meaning, as they are actively involved in their own learning. Therefore, *learning as a process,* or *process learning,* may be the preferred approach, rather than having students parrot what the teacher prescribes (Cambourne, 2002). Learners are encouraged to "critique, contest, or question" the content of texts as constructivism does not assume there is "one correct answer or response to texts" (Cambourne, 2002, p. 27). Learners begin to take ownership of concepts and knowledge, as they provide their own paraphrasing of newly observed modeling or expressing by the teacher or peer. Additionally, a transformation in higher–order thinking occurs as learners take time to make sense of newly presented skills, and participate in dialogue to understand better or clarify the literacy of a text. Since "knowledge and meaning are socially constructed" (Cambourne, 2002, p. 29), taking part in collaborative discourse and discussions is necessary, because they provide for further processing of newly learned items.

Furthermore, social interaction should provide settings where learners construct their own perspectives of text meaning. The environment ought to promote individual engagement with peers, to gain understanding from one another's perspectives. Cambourne (2002) viewed learners' social engagement, containing explicit goals for learning in collaborative group settings, as being "one of the most potent forms of this mechanism, because such groups provide a readily available means of testing one's own understandings through listening to and reflecting on the understandings of others" (Cambourne, 2002, p. 29; Donato & McCormick, 1994; Lantolf, 1994; Lantolf & Thorne, 2007).

7 Discussion

The research discussed above points to the applicability of first assessing learners' primary reading components, and then providing instruction that encompasses primary components, learning and reading strategies, and including the use of peer collaboration with strategies and reading.

Because there was a lack of sufficient research, data relating directly to the situation of teaching English as a Foreign (or Second) Language in Iceland, studies were reported from the domains of foreign language learning and teaching, L1 and L2 reading comprehension, and adolescent literacy. Therefore, it is hoped these will have provided a basis from which to inform teachers of the English language in Iceland.

A greater body of research focuses on younger L1 English learners and younger L2 learners, but less is available on middle grades, or the upper grades of secondary school (Edmonds et al., 2009, p. 264; Slavin et al., 2008b, p. 309). Therefore, we must draw conclusions about how L2 learners comprehend English academic texts by utilizing research of native English language learners and particularly adolescent learners (Torgesen et al, 2007).

A strong body of research on adolescent literacy is emerging however. As Torgesen et al. (2007) explained, "research is based on studies conducted with native English speakers [which] is relevant here because many native English-speaking adolescents share similar struggles with literacy and weaknesses in academic language and vocabulary" (p. 94). We know how to target instruction for struggling L1 English language readers. As Slavin et al. (2008b) reiterated, "more research and development of

reading programs for secondary students is clearly needed, but we already know enough to take action, to use what we know now to improve reading outcomes for students with reading difficulties in their critical secondary years" (p. 309).

However, there is not yet sufficient research on adolescent L2 learners of English struggling with reading comprehension to inform the practice of L2 learning for older adolescents. In fact, there is "less known about the ways in which such growth can be fostered in instructional contexts", as reported by the National Reading Panel (2007) concerning the effects of pedagogy on vocabulary acquisition, and reading programs involving secondary students (Slavin et al., 2008b). Moreover, there are appeals for more research on whether professional development for teaching reading strategies gives significantly positive effects for improving reader comprehension (National Reading Panel, 2000, p. 4–47; Slavin et al., 2008b). This is why researchers need more studies that focus on ways in which educators can effectively support older L2 learners with reading comprehension difficulties, and on educators teaching L2 English, from which to inform their practice (National Institute for Literacy, 2007; National Reading Panel, 2000; Slavin et al., 2008b).

Studies suggest, however, that L2 learners need a sufficient amount of background knowledge, content knowledge, vocabulary knowledge, fluency, and communicative opportunities (Torgesen et al., 2007). When learners know words well enough to use them in their oral language they are more likely able to identify, decode, and read them (Edmonds et al., 2009; National Reading Panel, 2000; Torgesen et al., 2007). Torgesen et al. (2007) concluded that, "There is a well demonstrated relationship between oral language skills, particularly vocabulary, and reading comprehension among both native English speakers (e.g., Freebody & Anderson, 1983) and ELLs" (as cited in Torgesen et al., 2007, p. 95). Evidence supports "structured, phonetic programs emphasizing language development, in both native language and English L2 instruction", for beginner readers, while some studies indicate this need for any L2 learners where assessments show their need (Cheung & Slavin, 2005, pp. 261-262). Strong evidence supports "extensive use of cooperative learning, vocabulary instruction, and literature" for upper primary learners of reading (Cheung & Slavin, 2005, pp. 261-262). Peer–assisted learning strategies show significantly positive effects on reading comprehension for both elementary and secondary students (Fuchs et al., 1999; Maheady et al., 2006; Slavin et al., 2008b). Additionally, Edmonds et al. (2009) suggested "explicit comprehension strategy instruction" (p. 293) for older secondary struggling

readers, while Kamil et al. (2008) and others reported strong evidence for direct explicit multiple strategy instruction (Biancarosa & Snow, 2006; Edmonds et al., 2009, p. 309; Kamil et al., 2008; Slavin et al., 2008b). For middle and high school grades, Slavin et al. (2008b) recommended cooperative learning programs, some of which gave potentially positive, moderately positive, to statistically significant evidence of effectiveness on various domains, such as reading achievement, L2 language development, and reading comprehension; and mixed-method models, strategy instruction, and extensive professional development, which gave positive effects for improvement.

Fewer learners will need remedial instruction of primary components. However, because there are approximately 10% percent of adolescent native English learners who continue to struggle with some form of primary reading components, even though elementary school educators give instruction of these, there remains the need to address them after assessments reveal student needs (Biancarosa & Snow, 2006; Torgesen et al., 2007). The National Institute for Literacy (2007) acknowledged that,

> Because word identification is one of the foundational processes of reading, middle and high school students with poor or impaired word identification skills face serious challenges in their academic work. Some struggling adolescent readers have difficulty decoding and recognizing multi-syllabic words. (p. 15)

Slavin et al. (2011) reported tutoring that focuses on small group, phonetic tutorials, and more importantly, on one-to-one phonetically focused tutoring to help improve reading proficiency among L2 learners, beginning and struggling readers. However, there is a call by researchers for more data to better and further inform instruction and research of primary component instruction for older learners (National Reading Panel, 2000).

As this thesis has attempted to show, struggling readers will continue to experience reading deficiencies unless educators are willing to participate in professional development opportunities that:

1. inform them of the most current research showing promising effectiveness for improving language and strategy instruction
2. enhance their understanding of language development

3. show ways of scaffolding L2 language learners (Biancarosa & Snow, 2006; Kamil, 2003; National Reading Panel, 2004; Slavin et al., 2011).

Language teachers and content area teachers can more effectively facilitate learning when they collaboratively plan their lessons. Additionally, research concludes that the most effective L2 language learning models involve cooperative or collaborative learning. Moreover, as learners need to comprehend complex text for content area subjects, both educators of language and content area subjects need to collaborate frequently with their instruction efforts (Biancarosa & Snow, 2006; National Institute for Literacy, 2007). This may benefit learners as teachers integrate content area subject needs with language learning, such as providing instructional and learning opportunities for the same vocabulary words and concepts learners need for understanding subject specific contents (Biancarosa & Snow, 2006).

The following summary is suggested by The National Institute for Literacy (2000) and Torgesen et al. (2007), from which they found to be necessary for content area teachers to most effectively support middle and high school (grades 6–12) L2 readers:

1. Diagnostic assessments, to be interpreted by reading specialists; summative and formative assessments for monitoring reading
2. Explicit direct instruction
3. Teacher modeling
4. Independent and guided practice of skills being taught
5. Repetition of multiple strategy instruction and times to practice
6. Interaction of small groups through reading
7. Teacher presents text, ideas, and strategies in different ways
8. Use smaller chunks of texts when teaching strategy use
9. Allow oral discussions of texts with peer groups or partners
10. Model and provide academic English usage and instruction

The most effective intervention for improving reading comprehension is teacher–led one-on-one tutoring (Slavin et al., 2011). Tutoring involves teaching students on an individual basis, by tailoring to their specific literacy needs (Slavin et al., 2011). However, one-on-one teaching is the most expensive compared to small group tutoring, paraprofessionals (teacher assistants), and volunteers (Slavin et al., 2011).

Studies of both L1 and L2 learners in the US, UK, and Australia, ages five through ten showed potentially positive effects on remedial instruction that facilitates learners with reading difficulties when language teachers

structure their tutoring lessons using any of the following interventions: first, one-to-one teacher with student; and second, one-to-one trained paraprofessionals. Some schools train and pay such teacher assistants. If a school does not have paraprofessionals, some schools use volunteers. They are the third effective means for remediating reader difficulties. The fourth is learning in small groups; and the fifth is classroom instructional programs, which include cooperative learning models (Biancarosa & Snow, 2006; Kamil, 2003; National Reading Panel, 2000; Slavin et al., 2011, pp. 6-12; Torgesen et al., 2007).

Primary component instruction:

Present research recommends explicitly teaching primary components when assessments prove their necessity. However, when educators assume older learners do not struggle with certain primary components, many students will continue to fall behind because whatever hinders their reading ability may go undetected. Some L2 learners struggle with reading because they need more development of primary components, such as lower–level processes, i.e. decoding, word recognition, phonological, orthographic, syntactic, and/or semantic aspects (Cheung & Slavin, 2005; Kamil, 2003; Kamil et al, 2008; National Reading Panel, 2000; Torgesen et al., 2007). For example, when learners do not know how to use the decoding processes for letter– or word–reading of unknown words, they will always depend on the assistance of others or on a limited number of memorized lists of words. Additionally, learners may more effectively learn and practice primary component skills using collaborative learning models.

Because decoding affects fluency learners lacking proficiency in this skill will struggle with comprehending academic texts. Arnbjörnsdóttir and Prinz (2013) proposed the importance of reading with proficiency. Reading academic text requires deeper cognitive processing, which affects higher–order thinking that occurs during reading. Moreover, they pointed out that "using a second language to master the curriculum affects the learning process" (p. 3). Additionally, studies indicate that a lack of fluency in reading second language academic texts will affect the struggling learners' ability to retain "terminology specific to their field of study" (Arnbjörnsdóttir & Prinz, 2013, p. 3). Furthermore, this lack of fluency may lead to a loss of motivation to read, which may then lead to giving up on reading altogether. This is representative of how one component part of reading deficiency may affect a learner's reading proficiency.

Since there are a percentage of L1 adolescents who struggle with reading comprehension, it may be that many also struggle with L2 reading

comprehension. Understanding an increase in reading comprehension difficulties amongst Icelandic secondary students deserves thoroughly investigating the causes. Ingvarsdóttir and Arnbjörnsdóttir (2010a) suggested a "call for further research into several areas; [as] we need to understand better what kind of English curriculum in upper–secondary schools would serve prospective university students best" (pp. 8-9). Furthermore, Arnbjörnsdóttir and Prinz (2013) reported research findings of Jeeves (2013), who indicated that Icelandic students were not prepared at the secondary-level of education "to make the English texts comprehensible" (as cited in Arnbjörnsdóttir & Prinz, 2013, p. 4).

Educators' professional development in literacy skill instruction:

Research on reading instruction provides valid guidelines and suggestions for policy makers, curriculum writers, and educators. Schools need to provide general and domain–specific reading specialists (Torgesen et al., 2007). Pedagogical practice needs to align with existing research (Kamil, 2003; National Reading Panel, 2000; Slavin et al., 2008b). However, more information is required on how to teach educators how to use approved strategy instruction for reading comprehension. Professional development should reflect these goals (Biancarosa & Snow, 2006; National Reading Panel, 2000).

Valid ongoing assessments:

Unless educators provide ongoing valid formative, summative, and diagnostic assessments, struggling readers may never receive interventions to improve their reading habits (Berman & Biancarosa, 2005; Biancarosa & Snow, 2006; Kamil et al., 2008; National Institute for Literacy, 2007). Present research suggests educators should use valid, appropriate reading comprehension assessments and diagnostics particular to reading comprehension, because there are specific underlying reading components, which affect adolescent reading comprehension, which may be under-learned. As indicated by the OECD report (2012, January), Icelandic upper secondary education suffers from a "lack of quality diagnosis" (p. 7).

Collaborative learning:

Recent research indicates a list of effective L2 language learning models, all involving peer collaborative learning (Berman & Biancarosa, 2005; Cheung & Slavin, 2005; Fuchs et al, 1999; Kamil et al., 2008; National Reading Panel, 2000; Slavin et al., 2008b; U.S. Department of Education, 2007). Evaluations of upper elementary L2 students using these reading programs showed significantly higher scores than the control groups (Cheung & Slavin, 2005; Fuchs et al., 2001). These include teacher–led, one-

on-one tutoring; teaching by trained paraprofessionals or volunteers; learning in small groups; and classroom instructional programs using cooperative learning models (Slavin et al., 2011). Peer collaboration while using reading strategies showed promising effects for improving reading comprehension. Cooperative reading models and several strategy instruction recommendations gave the most promising effects for improving reading comprehension.

There are several peer–reading models, which showed potentially positive effects, moderately positive to strong effects for improving reading comprehension and English language development. Research of *Peer-Assisted Learning Strategies* (PALS) for high school students indicated promising effects on reading comprehension. Further studies on PALS showed statistically significant improvement of reading comprehension for struggling adolescent readers (Fuchs et al., 2001; Slavin et al., 2008b). *Success for All* and *Cooperative Integrated Reading and Composition* models showed potentially positive effects on reading achievement and language development for L1 Spanish-speaking learners in grades 2–5 transitioning to reading English (L2), and medium to large effects for comprehension and general literacy achievement for adolescent learners (U.S. Department of Education, 2007). Additionally, there is a bilingual version of *CIRC* called *Bilingual Cooperative Integrated Reading* (*BCIRC)*, which showed potentially positive effects on reading achievement and English language development for L2 leaners (Cheung & Slavin, 2005; U.S. Department of Education, 2007). Biancarosa and Snow (2006) recommended two promising collaborative reading models for adolescents, known as *Text-based Collaborative Learning* and *Strategic Tutoring*. The former is similar to literature circles used in primary grades, and both can be implemented across curriculum (pp. 25-27).

Strategy instruction:

Learning strategies proposed by O'Malley and Chamot (1990) efficiently specified the most prevalent strategies (Mitchell & Myles, 2004, p. 106). The National Institute for Literacy (2007) recommended "strategies that support many diverse learners", which include connecting and accessing prior knowledge, increasing content knowledge, small discussion groups, and educator sensitivity to the various backgrounds of the learners, and "teacher model and provide instruction in academic English" (p. 38; National Reading panel, 2000). Direct, explicit instruction, practicing, using reading comprehension strategies, and multiple strategies, and practicing them are recommended. Research shows strong evidence of their

effectiveness, such as those used in Reciprocal Teaching and Peer-Assisted Learning Strategies (Berman & Biancarosa, 2005; Biancarosa & Snow, 2006; Edmonds et al., 2009; Fuchs et al., 1999; Kamil et al, 2008; National Institute for Literacy, 2007; National Reading Panel, 2000; Slavin et al., 2008b). However, more strategy learning research is needed to sufficiently inform practice (Mitchell & Myles, 2004, p. 107; National Institute for Literacy, 2007).

L2 Interdependence upon L1 literacy proficiency:

Recommendations throughout research are to provide bilingual or dual language instruction, when this is feasible. Adolescent English language learners who have difficulties in their first language with reading comprehension skills will likely have difficulty with the same skills involving L2 reading comprehension. The L1 reading PISA scores of fifteen-year-old adolescents tested in 2012 indicate that there is at least 21% of that student population struggling with reading component skills (OECD, 2012). Other recommendations are for educators initially to teach skills in learners' first language followed by teaching learners to transfer reading comprehension skills to English language reading, as their L2 verbal skills improve (Peterson et al., 2000).

Cognitive development plays a significant role in foreign language development (Collier, 1989; Cummins, 1979a, b; Hamers & Blanc, 2000; Rogoff, 1990; Thürmann et al., 2010). Studies suggest learners who do not develop higher–order thinking skills in their first language will not be able to develop to the capacity for cognitive use in a foreign language. They therefore will neither advance in foreign language learning, nor be able to use any language as a cognitive organizer for processing language and complex thinking.

8 Conclusion

This thesis is an examination of current research that indicate supportive approaches to the teaching of reading comprehension and English L2 instruction, representing a comprehensive review of various current literature on reading intervention instruction. The interventions that give promising and positive effectiveness for improving reading comprehension should be considered, while those that give strong evidence of effectiveness should be used in the Icelandic classroom for supporting L2 reading comprehension.

As educators increase their understanding of aspects of literacy attainment, learners have a greater potential for successful reading development. When learners lack basic component skills for comprehending academic texts, educators must have skills necessary to recognize them and know what to do to help their struggling readers (Berman & Biancarosa, 2005; Biancarosa & Snow, 2006; National Institute for Literacy, 2007; National Reading Panel, 2000). Comprehension strategy instruction and content area literacy instruction are two recommendations for educators who may need to improve their own knowledge of them (Berman & Biancarosa, 2005; National Reading Panel, 2000). Additionally, ongoing and long–term professional development, specifically in the area of literacy, is vital for efficiently implementing appropriate assessments (Biancarosa & Snow, 2006; Kamil, 2003; National Reading Panel, 2000; Torgesen et al., 2007). Valid professional assessment measures and tools are essential for all schools to have access to and use. Ongoing valid formative and summative assessments for learner literacy progress and for assessing the effectiveness of programs are crucial for older learners, such as those in middle and high schools (Biancarosa & Snow, 2006).

Literacy and reading comprehension training typically ends by fourth grade, because the assumption is that students have already learned how to read. Schools and their libraries must be equipped with *graded readers* and other age appropriate and relevant reading material. Reading teachers or specialists, content area educators, and administrators must be prepared to recognize and understand the complexities involved in reading comprehension in order to sufficiently serve all learners, based on evidenced–based research of reading, L1 and L2 cognitive development, and for higher–order thinking. They must also be willing to invest in

materials that research suggests as valid for improving the literacy needs of adolescent learners, such as graded readers, programs such as *Success for All*, and valid assessment tools, for example as listed in Saskatchewan Learning (2004).

After thoroughly examining research literature to answer the original question of this study, the conclusion indicates that it is possible to identify the following three features that have the potential to improve and aid reading comprehension for Icelandic L2 learners:

1. Primary reading component diagnosis and explicit interventions for improving them.
2. Peer reading models.
3. Reading comprehension strategies.

Primary reading component diagnosis and explicit interventions:

In conclusion, research appears to indicate that there are underlying literacy component skills that some adolescents may need in order to comprehend academic texts. Moreover, they are traceable with valid assessments and educator awareness and knowledge. The skills that L2 learners need in order to comprehend words, sentences, and whole texts may be foundational reading skills. They may be comprehension or reading strategies. On the other hand, they may involve a lack of vocabulary knowledge. Consequently, adolescent learners of English L2 will need to know how to read and understand text content at a highly complex level of understanding, including having the ability to use the language for reflecting, reasoning, and critical thinking. These skill components are essential for reading and learning from texts, which learners will encounter in content area subjects.

After valid assessments reveal such deficiencies, some struggling L2 readers will benefit from knowing and mastering components such as decoding, fluency, and lexical knowledge. Most L2 learners will benefit from direct instruction, explicit instruction in the use of reading strategies, ongoing vocabulary instruction, and opportunities for multiple exposures to previously unknown words. This study examines the known components necessary for reading comprehension to take place in order to comprehend academic texts.

Peer reading models:

Peer reading models used in English speaking countries by L1 and several L2 English language learners, when used by Icelandic students may also improve their reading comprehension of English texts. Research gives

promising and strong indications of effectiveness for improving reading comprehension when language learning and content area instruction combine both collaborative peer reading with strategy learning. Research indicates peer reading and learning models such as, Peer Assisted Learning Strategies, Bilingual Cooperative Integrated Reading and Composition, Reciprocal Teaching, and multi-strategy instruction, facilitates the improvement of language development, reading achievement, and comprehension of English texts. Thus, it may facilitate language development and improve reading comprehension for Icelandic L2 English language learners, after their L1 literacy is sufficiently developed.

Reading comprehension strategies:

There remains a need for more research of strategy instruction and the potential effectiveness of their use. Specifically, researchers need to know more about the effectiveness of teaching strategies for learners in secondary grades, and collaborative learning instruction using multiple strategies. Studies indicate that classrooms using peer tutoring demonstrated greater reading progress regardless of the type of learner in the classroom, and showed potentially positive effects for improvement in the reading comprehension domain for students in grades 2 to 6. Peer-Assisted Learning Strategies has potentially positive effects on comprehension for adolescent learners. Bilingual Cooperative Integrated Reading and Composition (BCIRC) reading models indicate potentially positive effects on reading achievement for English Language Learners in grades 2 to 5. As stated earlier, there are too few research studies of older L2 learners; however, based on what research has shown of promising effects for L1 and younger L2 learners, strategy instruction with collaborative reading partners may help adolescent readers improve their reading comprehension of English texts.

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