

**SYNTHESIS OF LONGITUDINAL STUDIES
OF LITERACY DEVELOPMENT**

by

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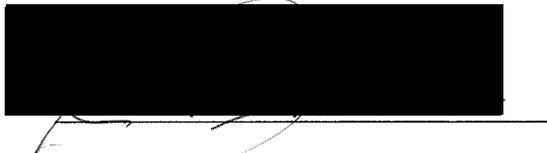
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SYNTHESIS OF LONGITUDINAL STUDIES OF LITERACY DEVELOPMENT

ABSTRACT

Moore, Bean, Birdyshaw, and Rycik (1999), in their Position Statement for the International Reading Association on Adolescent Literacy, remind educators that “early achievement is not the end of the story...there are developmental stages of reading and writing” (p. 99) into adolescence and adulthood. This study asks the question of the impact of instructional and non-instructional factors on literacy development over time. To answer the question, a thorough and extensive review of the literature on longitudinal studies of literacy development was conducted. A synthesis of the research produced several related findings. First, instructional factors influencing literacy development over time include curriculum (content being taught): comprehension (word decoding/vocabulary), print-references (comprehension/reading/spelling), word recognition, fluency, phonological awareness, phonics, and phonemic awareness. The starting time for formal reading instruction and providing early intervention programs are other instructional factors. Findings also show that certain packaged literacy programs also positively impact literacy development over time. Other results indicate that non-instructional factors influencing literacy development over time include reader self-perception, behavior regulation, and a home life with a variety of literacy experiences. One other non-instructional factor found is school placement (high or low ability group). These findings are applicable for the professional development of elementary teachers, specifically, pre-kindergarten to grade three, and therefore will be distributed to them through a ten minute Teacher Tube professional development video.

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Chapter 1: Introduction

Statement of the Problem

This capstone project is a research synthesis that produces professional development for elementary school teachers. The topic of this synthesis is literacy development, specifically, the impact of instructional and non-instructional factors on literacy development over time. The problem being addressed is the low literacy levels in adolescent students and adults in today's society. The United States Department of Education issued an estimate of the literacy skills of adults through the *National Center for Education Statistics (NCES)*, (2003). Performance is rated on a scale classifying the adults as: *Below Basic, Basic, Intermediate and Proficient* (NCES, 2003, p. 3). NCES estimates that 93 million U.S. adults have *Basic and Below Basic* literacy skills. NCES also finds that 7 million adults are non-literate, meaning they "could not answer simple test questions" (NCES, 2003, p. 3). The National Assessment of Educational Progress (NAEP) has found that within the last few years, 68% of eighth graders were reading below the *Proficient level*, and one quarter were below the most basic level (Grigg, Daane, Jin, & Campbell, 2003). These numbers may be surprising given the mandatory school leaving age for most of the United States. While there are many problems connected to these ratings, one problem is attempting to identify factors which may impact long term literacy development. For a reading specialist, this problem can be more specifically seen as instructional and non-instructional factors in the elementary school years which may significantly impact literacy development over time. A suitable question to address this problem is, based on longitudinal studies of literacy development, what are instructional or other factors that significantly impact

literacy development over time? To answer this question, I will complete an extensive literature review of longitudinal studies and synthesize the findings to determine possible factors that impact literacy development over time. Findings from this synthesis will then be designed into professional development for elementary classroom teachers, so that they may work to stop this problem in its early stages.

Background

I am a high school special education social studies teacher and have several students who cannot read. I wonder why they cannot read at their age: perhaps there was some literacy instruction they did not understand or missed out on in their early schooling, and if so, in what grades did this occur? I decided to select this topic of factors influencing literacy development over time because I wondered how low literacy levels are present in adolescent students and adults given mandatory school attendance. I also began to wonder what might be done in elementary education that could decrease the likelihood of low literacy levels in adolescents and adults. This topic is significant to me as both a special education teacher and a future literacy specialist. I will research this topic in an effort to identify factors that may impact literacy development over time. I will then create professional development where I present this knowledge to elementary teachers in an effort to help these teachers adjust their literacy lessons in ways to address these factors. With this extensive research and the professional development I create, I want to have a positive impact on the number of adolescent students and adults who can read.

Terminology

The following are terms that are frequently used in this proposal are explained in detail below.

Longitudinal- “observing or examining a group of people or things over time to study how one or two particular things about them change” (Longitudinal, 2011, p. 1). For this research synthesis, a period of two or more years will be considered longitudinal.

Literacy development- “the ability to use written language to function seamlessly in a literate culture, to pursue goals independently and to acquire knowledge required for a successful life” (Massaro, 2012, p. 324).

Factor- a dependent variable which is measurable and may or may not be capable of change by a teacher (McMillan, 2008, p. 234).

Instructional factors- teaching strategies a teacher uses or classroom practices initiated/guided by a teacher. Factors related to teacher performance in his/her role as instructor.

Non-instructional factors- factors not related to instruction in a classroom; these may include factors over which a teacher has no control (ex) parental involvement, home life, poverty, identified student disability.

Theoretical Framework

One cluster of the theories that supports this proposed study is the Constructivist learning theories. Constructivist theories suggest that learning is an active process in which learners construct new ideas or concepts based upon their current/past knowledge (Bruner, 1966). The learner selects and transforms information, constructs hypotheses, and makes decisions, relying on a cognitive structure. This cognitive structure includes the schema and mental models which provide meaning and organization to a student's experiences, thus allowing the student to "go beyond the information given" (Bruner, 1966, p. 56). This theory supports the idea of long term literacy development, and literacy skills that develop over time.

Rationale

This topic is valuable. Identifying literacy factors, both instructional and non-instructional, that may significantly impact literacy development over time will provide important information about long-term effects within the field of literacy instruction. Knowing this information about possible factors in literacy, and especially factors related to instruction -- factors that elementary teachers may be able to influence directly in order to increase the reading ability of adolescents and adults -- would be worthwhile for classroom teachers and literacy coaches. A project to answer this question will be worthwhile to the field of literacy because answering this question may help decrease the number of students graduating high school who cannot read. If I can identify specific instructional and non-instructional factors that significantly impact literacy development over time, then I would also be able to inform elementary teachers

who in turn could address those factors in their teaching. In creating professional development to spread the news of these instructional and non-instructional factors, I might be able to influence the number of adolescents and adults who read at the *Below Basic level*. This would be an important contribution to the field of literacy.

Chapter 2: Literature Review

The most appropriate way to address the research question about the literacy factors that significantly impact literacy development over time is to conduct a literature review and research synthesis. To do that, I searched the leading educational databases for research articles related to this question. For the purpose of this research synthesis I did not include studies focusing on English Language Learners. This allowed me to specifically research the instructional and non-instructional factors related to reading instruction in students who only speak one language; English. After examining all the found articles, I saw that my research question addresses three components: longitudinal studies for literacy development, instructional, and non-instructional factors influencing literacy development. An examination of the longitudinal components indicates that there are both long term and short term effects. Therefore the most appropriate groupings for the studies reviewed in this chapter are long term instructional factors for literacy development, long term non-instructional factors for literacy development, short term instructional factors for literacy development, and short term non-instructional factors for literacy development.

Long Term Instructional Factors for Literacy Development

For this research project, a longitudinal study is one where data collection covers a minimum of a two year span. The studies in this section are arranged by their length, beginning with the shortest studies. McCormick and Haack (2010) conduct a three year longitudinal study following participants from the end of their pre-kindergarten year through grade two. The

purpose of their study was to examine the validity of the Individual Growth and Development Indicators (IGDI) assessment for measurement of early reading skill development. Participants were 65 diverse students from a Midwestern suburban school district. The participants were from four “eligibility categories: typical, at-risk, speech, or special education” (p. 32). The assessment measures used in this study were Early Literacy Individual Growth and Development Indicators (EL-IGDI), Dynamic Indicators of Basic Early Literacy Skills (DIBELS), and Measures of Academic Progress (MAP). The IGDI’s were administered at the end of the participants’ pre-kindergarten year as a baseline. The assessments were then administered to each participant during the fall, winter, and spring of each school year from kindergarten through grade two. The material measured was a part of the district’s curriculum and taught throughout all three years. The results of this study indicate that the “EL-IGDI’s during the pre-kindergarten year are moderately predictive of later outcomes in reading skills from kindergarten through second grade” (p. 37). Picture naming and alliteration were also found to be predictors of later reading skills. Another finding of their study is that “using K-2 DIBELS to guide reading instruction toward third grade” (p. 37) was a “successful” (p. 37) approach. McCormick and Haack’s (2010) findings relate to my research question in that they find an instructional factor: early reading instruction positively affects literacy development; “preschool is an opportune time to promote literacy development” (p. 36) as shown by the EL-IGDI’s. Therefore pre-school student’s curriculum and the time frame in which it is being taught is a factor that influences long-term literacy growth.

This next study looks at the possibility of early literacy skills impacting literacy development over time. Byrne, Samuelsson, Wadsworth, Hulslander, Corley, Defries, and Olson (2007) conduct a study examining literacy development in twins. This four year International

Longitudinal Twin Study (ILTS) examines genetic and environmental influences on childrens' early progress in literacy from pre-kindergarten to grade one. Participants were 319 pairs of twins: 167 monozygotic (MZ) twin pairs (92 from the United States and 75 from Australia), and 152 same-sex dizygotic (DZ) pairs (105 from the United States and 47 from Australia). The participants were given a battery of literacy assessments and were tested once a year starting in pre-kindergarten. From the analysis of assessment results, researchers determined that reading comprehension and word reading are affected by the same genes, and there appears to be both genetic continuity and genetic change in word reading as children move from kindergarten to grade one. Researchers also find that patterns of genetic influence on reading and spelling in grade one were similar between the American and the Australian children; however, Australian children achieved higher scores in almost every measure. While these findings identify the non-instructional factor of: genetic influence on literacy development from pre-kindergarten to grade one, the researchers suggest that this result may be due to the fact that "more intensive kindergarten literacy curriculum" (p. 77) is present in Australia than in the United States and "more of the genes are "online" sooner in Australia because of accelerated overall reading development" (p. 77). Therefore, Byrne et. al.'s (2007) findings also identify the instructional factor of "intensive" (p. 77) reading curriculum as affecting child's literacy development over time.

The three year longitudinal study by Piasta, Justice, McGinty, and Kaderavek, (2012) also followed participants from pre-kindergarten to grade one. Researchers examined the effects on literacy development of increasing young children's contact with print during shared reading. Participants were children from 85 preschool classrooms from low income families with ethnic diversity in the United States. The number of starting participants was 366, with only 356 located

by the end of the third year of the study. All of the participants experienced a 30-week shared reading program along with one of three reading programs or “study conditions” (p. 812). These programs were randomly assigned to the participants’ pre-schools. These selected programs were “high-dose” (p. 813) Project STAR, “low-dose” (p. 813) Project STAR, and a “regular” (p. 813) reading program. To increase the participants’ contact with print, each teacher was given a set of 30 children’s storybooks and asked to read one book per week as a whole-class shared-reading session. The books were selected based on their “print-salient features” (p. 814). Data included twice a month videotapes of the whole-class reading sessions, and teacher logs recording all reading taking place in their classroom. In addition, participants completed up to four assessment sessions over the three year period. Assessments measured emergent literacy skills and vocabulary skills. Piasta, Justice, McGinty, and Kaderavek’s (2012) findings show that use of print references during shared reading “significantly impacts” (p.818) the development of children’s early literacy skills of reading, spelling, and comprehension. Results also indicate a “causal relation” (p. 818) between early print knowledge and later literacy skills.

Moving from early literacy skills to reading comprehension, the three year longitudinal study by Bast and Reitsma (1998) followed participants from kindergarten to grade three. Researchers wanted to analyze the development of individual differences in reading using the “Matthew Effect” (p. 1373) which “refers to the phenomenon that, over time, better readers get even better, and poorer readers become relatively poorer” (p. 1373). Participants consisted of 235 students (121 boys and 114 girls) from 40 Dutch elementary schools, all using the same reading program. Some participants were successful beginning readers, some were average readers, and some were students who initially did not meet expectations in their reading progress. Throughout the study, the researchers measured the students’ development of word recognition skills and

reading comprehension skills. Bast and Reitsma (1998) also looked at a comprehensive set of relevant factors thought to influence vocabulary and comprehension development. Multiple yearly assessments totaling 49 were made to determine each student's reading development in the areas of word recognition and reading comprehension; of vocabulary, phonological skills, leisure reading activities, and attitudes towards reading; and in the area of "characteristics" (p. 1386) of each participant. Data analysis shows that while there were "no initial differences" (p. 1387) in reading ability among the participants, there were "significant differences" (p. 1387) in reading ability among the same participants at the completion of grade three. Bast and Reitsma (1998) find the Matthew Effect to be "true" (p. 1386) for the reading area of word recognition: "initially poor readers remained poor readers during the first three grades and the performance gap relative to good readers became larger over the course of development" (p. 1386). However, researchers find no Matthew Effects for reading comprehension. Instead, they find reading comprehension skills to be affected by the readers' word recognition skills and vocabulary. Also, home literacy appears to relate positively to readers' vocabulary skills. Thus Bast and Reitsma (1998) determine some long term effects on literacy development to be that word recognition and vocabulary skills impact development of phonological skills and reading comprehension over time.

Another three year longitudinal study examining the impact on reading comprehension is by Chain and Oakhill (2006) who followed participants from eight years old to eleven years old from 17 classrooms in 6 schools with middle-lower class economic status. Researchers examined participants with specific reading comprehension difficulties to investigate "the consistency of skill impairment" (p. 686). The researchers were looking to find any fundamental skill weakness that might be associated with poor text comprehension and might "lead to depressed reading

development” (p. 686), and looking to determine whether reading comprehension difficulties are associated with more general education difficulties. Participants were 23 poor “comprehenders and 23 good comprehenders” (p. 686) as determined by the Neal analysis of reading ability. Participants were first assessed at eight years old on their word reading, text comprehension, vocabulary, syntax, cognitive ability, working memory, and comprehension sub skills; and again at 11 years old on their listening comprehension, SAT scores, and reasoning skills. At 11 years, the participants were also re-assessed using the Neal analysis of reading ability. Chain and Oakhill (2006) find that “poor vocabulary skills led to impaired growth in word reading ability and poor general cognitive ability led to impaired growth in comprehension” (p. 692). Data from the second assessment collection show the poor comprehenders obtained lower SAT scores than the good comprehenders. Results relate to my research question in that factors such as vocabulary and poor cognitive ability have led to impaired growth in comprehension.

Continuing with a focus on reading comprehension Verhoeven and Leeuwe (2008) conducted a six year longitudinal study following participants from grade one to grade six. The researchers examined the ability to predict the development of reading comprehension by assessing the effects of word decoding, vocabulary, and listening comprehension. Participants were 2143 Dutch children from 1178 elementary schools in the Netherlands. Researchers collected data on word decoding speed, vocabulary, listening comprehension, and reading comprehension at the half way point through each grade. The researchers find that word decoding has a “large effect” (p. 420) on early reading comprehension by students in the early grades, but a “small effect” (p. 420) on reading comprehension by students in later grades. Vocabulary growth is found to “predict the development of reading comprehension across grade levels” (p. 420) whereas listening comprehension shows “a reciprocal relationship with

vocabulary” (p. 420), meaning vocabulary is an important factor in developing a child’s reading and listening comprehension. These findings identify the instructional factor of word decoding development impacts reading comprehension in the early grades and the instructional factor of vocabulary development impacts listening comprehension and reading comprehension in the later grades.

Another longitudinal study that provides an instructional factor is by Frost, Madsbjerg, Niedersoe, Olofsson, and Sorensen (2005) who conducted a 14 year study to determine the role of semantic and phonological skills in predicting reading development. Participants were 316 three year olds from four municipalities on the Danish island of Bornholm who were studied from three to 16 years old. The participants were tested multiple times throughout this study. At age three they had a speech therapist screening and at age six they were given a meta-phonological awareness test. The participants were tested in reading measures in October and April in grade two, March in grade three, April in grade four, November in grade six, and November in grade nine. The participants received reading instruction in the areas tested from age three to 16. The results of this study indicate that phonological sensitivity is “essential for reading and spelling development” (p. 88) and for “learning to read” (p. 88). The researchers also state that further reading development depends on the students ability to “integrate word level decoding strategies...and on the ability to comprehend written texts” (p. 88). Vocabulary, comprehension, and sentence construction are also found to predict reading development. The researchers conclude that “in early reading development, it is necessary to stress specifically the development of phonological awareness in order to launch reading ability” (p. 90). This study identifies the instructional factors of specific instruction in vocabulary, comprehension, and sentence construction as contributing to significant impact on reading development over time.

Moving from vocabulary, comprehension, and sentence construction to phonological awareness, the two year study consists of two groups of participants with varying longitudinal periods. Longhin, Burgess, and Anthony (2000) followed participants from pre-kindergarten to grade one. The purpose of their study was to examine the development of emergent literacy and early reading skills in pre-school students. Participants were 193 students, the majority female, from middle to upper income families in 13 pre-schools. All participants were reported to have been read to frequently at home and had shared reading experiences. The first group consisted of 96 pre-school students ranging from 25-61 months old this group received follow up testing a year and a half after their initial testing. While the second group consisting of 97 pre-school students ranging from 48-64 months old received follow up testing a year after their initial testing. The first group of participants received two to four sessions of assessments in a two to three week period using four standardized tests for oral language, four tests of phonological sensitivity and two tests of non-verbal cognitive ability. Their second assessment period (a year and a half later) consisted of four tests of phonological sensitivity, two tests of letter knowledge, an environmental print task, and a print concepts task. The second group of participants were initially assessed using one oral language test, four phonological sensitivity tests, two tests of letter knowledge, an environmental print task, and a print concepts task. Their second assessment period (a year later) consisted of 4 tests of phonological sensitivity, 2 tests of letter knowledge, a print concepts task, and 2 text decoding tasks. Longhin, Burgess, and Anthony (2000) find that the “developmental origins of children’s reading skills” (p. 606) in kindergarten and grade one can be found in the pre-school period. Phonological sensitivity and letter knowledge accounted for the majority of children’s decoding ability at the end of grade one. This study identifies the instructional factor of phonological sensitivity to be a crucial factor for decoding.

From phonological awareness to phonics, this four year longitudinal study by Xue and Meisels (2004) follows participants from pre-kindergarten to kindergarten examining early literacy instruction and learning in kindergarten. This study was designed to answer three questions: does children's learning in kindergarten vary across classrooms and schools, what impact do different early literacy instructional approaches have on children's learning in kindergarten, and do these instructional approaches have differential effects among children with different backgrounds? Participants were 13,609 kindergarten students with diverse backgrounds in 2,690 classrooms and 788 schools. Data collection is based on the end of kindergarten measurement of three outcomes: students' achievement as measured by a direct cognitive test focusing on language and literacy, students' achievement as measured by indirect teacher ratings of children's skills, knowledge, and behaviors (using the Language and Literacy subscale of the Academic Rating Scale (ARS)), and teacher ratings of children's approaches to learning (using the Social Rating Scale (SRS)). Other assessments to measure other components of instruction were conducted throughout the year. Xue and Meisel's (2004) findings show that "classroom mean outcomes were significantly higher" (p. 220) when classroom teachers used integrated language arts and phonics often in their classrooms. These findings further suggest that literacy instruction is effective when it provides children with systematic activities in phonics that help them acquire better alphabetic reading skills. These findings identify the instructional factor of phonics instruction to significantly impact literacy development over time.

From phonics to phonemic awareness, Juel (1988) conducted a four year longitudinal study following participants from grade one to grade four. Participants were 54 diverse students from one large elementary school in a low socioeconomic area. The participants received reading instruction using the Basil Series focusing on sight words, phonics, and word identification. In

grade one to grade two the participants also received supplemental instruction using a phonics program. The assessment measures included a phonemic awareness test which was administered in October and April of each grade except grade four, decoding assessments administered October and April of each grade. Word recognition was also assessed and administered at the beginning of grade one and several times each year, the participants were only assessed using the words they have already learned. Listening comprehension was assessed in September of grade one and was also used as a year-end measure. Reading comprehension and Basil tests were administered each year along with the children's attitude toward reading. An IQ test was administered at the beginning of grade two, spelling assessments were administered in April of each year, and writing measures were taken twice each year. Juel (1988) finds several instructional factors impacting literacy instruction over time: phonemic awareness, spelling, and decoding.

The last study in this subsection examines a professional development program that positively impacts literacy development over time. The four year longitudinal study by Biancaroas, Byrk, and Dexter (2010) focus on and assess the effectiveness of professional development (PD) in the Literacy Collaborative (LC) program. The LC program "is a comprehensive school reform program designed to improve elementary children's reading, writing, and language skills primarily through school-based coaching" (p. 9). The LC program follows students from Kindergarten to grade two; participants were 8,576 students, 111 teachers, in 17 schools from kindergarten to grade two. Researchers conducted 27,427 observations and a mix of reading assessments to collect data while assessing each individual student no more than six times. The reading assessments were the Dynamic Indicators of Basic Early Literacy skills (DIBELS) and the Terra Nova. Biancaroas, Byrk, and Dexter (2010) find that children who

entered the LC program with lower literacy levels “tended to learn at a faster rate” (p. 27) than those who entered with higher literacy levels. The researchers also find that schools “with higher growth at baseline accrued larger value-added effects that year” (p. 27). A majority of the teacher participants also show “substantial value-added effects” (p. 27) by the end of the study. Results of this study indicate significant gains in student literacy learning, beginning in the first year of the program, and indicate that the “effects magnitude grew larger” (p. 27) each year of the study. These findings relate to my research question in that they find an instructional factor: the Literacy Collaborative (LC) program significantly impacts students’ literacy development over time.

Long Term Non-Instructional Factors for Literacy Development

Moving from instructional factors to non-instructional factors affecting literacy development over time, Chapman, Massey, Tunmer, and Prochnow (2000) conducted a three year longitudinal study following participants from kindergarten to grade two. The purpose of this study was to identify participants who had developed “positive, negative, or typical academic self-concept (ASC)” (p. 706) related to the students’ academic reading achievement. Participants were 152 five year old students from 16 urban schools in a range of socioeconomic areas. These participants had not had any previous formal reading instruction before the study began. The ACS assessment measure asked the participants 70 yes or no questions related to the academic areas of reading, spelling, language arts, math, and printing/writing, this assessment was administered to the participants at the beginning and end of kindergarten and at the middle of grade two. Other assessments were administered to determine the participants pre-reading

skills of phonological sensitivity, letter-name knowledge, and rhyming, these assessments were administered to the participants at the beginning of their kindergarten year. Reading performance assessments were administered toward the end of grade one and during the middle of grade three. The participants received reading instruction during all three years which addressed the measures being assessed. Chapman, Massey, Tunmer, and Prochnow's (2000) findings show that "children with negative ACS had considerably poorer phonological sensitivity skills and letter-name knowledge at the beginning of their schooling than did those with positive ASC" (p. 708). The participants with negative ACS also read lower level books and performed at lower levels in word recognition and reading comprehension than the participants with positive ACS. The findings of this study identify the non-instructional factor of "achievement-related self-perceptions interact with reading performance at a very early stage in schooling...for children who experience initial difficulty in learning to read" (p. 708).

Connor, Morrison, and Katch (2004) conducted a three year longitudinal study exploring the effect of child-instruction interactions on growth in early reading in order to answer the question of how vocabulary and decoding effect a grade one students' early reading growth. Participants were 108 diverse grade one students and 42 grade one teachers from the same school district in a large Midwestern city. The school district supported a whole-language approach to literacy instruction using student-initiated reading and writing activities. Participants' cognitive abilities were assessed in the first year using the Stanford-Binet Intelligence Scale-4th Edition. Participants were then subject to a battery of tests in the fall and spring of grade one using the Peabody Picture Vocabulary Test and the Reading Recognition subtest of the Peabody Individual Achievement Tests. Parents of the grade one participants were also assessed using a questionnaire filled out in their first year of the study asking for descriptive information about

the family, mothers' educational levels, and home literacy. Classroom instruction was observed in the fall, winter, and spring of the school year during three day sessions. Connor, Morrison, and Katch (2004) find that "the effects of specific first grade instructional practices on children's decoding skills depended on the participants vocabulary and decoding skills entering first grade" (p. 329). The researchers "speculate that stronger vocabulary skills may support children's implicit decoding learning because they have a greater repertoire of words to rely on when they encounter unknown words" (p 329). The researchers' findings relate to my research question in that they find how to implement the instructional factors of decoding and vocabulary in a first grade classroom to ensure success for all students. They also find the non-instructional factor of practicing early literacy skills at home to impact literacy development over time.

Moving from twins to diversity, the four year longitudinal study by Foster and Miller (2007) followed, 12,621 diverse participants from kindergarten to grade three to "specify the development trajectories" (p. 175) for phonics and early text comprehension skills of diverse children. Researchers collected data from the "kindergarten cohort of the Early Childhood Longitudinal Study" (ECLS) (p. 175) in the fall and spring of the participants' kindergarten year and the spring of grades one and two. Based on the ECLS-Kindergarten scores, the participants were placed in literacy "readiness groups" (p. 176). Researchers find that the participants in the "average and high literacy readiness groups achieved high decoding (phonics) scores by the end of first grade" (p. 179); they also scored much higher in text comprehension in grade one and three than the low readiness group. These findings relate to my research question in that they find the non-instructional factor of students who begin school in the average and high readiness groups, according to phonics and text comprehension scores, will stay in the average and high

readiness groups over time, while the students in the low readiness groups will stay in those groups over time.

From diversity to behavior, this five year longitudinal study by McClelland et al., (2007) follows participants from pre-school to grade three examining the links between behavioral regulation and preschoolers' literacy, vocabulary, and math skills. The researchers seek to answer two questions: what is the variability and growth over the pre-kindergarten year in behavioral regulation, using a measure that relies on direct observation of the child's behavior rather than teacher or parent report; and whether "behavioral regression would relate to three measures of early academic achievement" (p. 957). Participants were pre-school children from two different states, Michigan and Oregon, participants in Michigan were 217 four year old children from 42 different classrooms, while the Oregon participants were 93 children from 12 different classrooms all participants were diverse from a mixed socio-economic status (SES). Researchers began assessing the participants in the fall and spring of their pre-kindergarten year. McClelland et al, (2007) find that "behavior regulation" (p. 957) significantly and positively affects emergent literacy, vocabulary, and math skills. Moreover, growth in behavior regulation predicts growth in emergent literacy, vocabulary, and math skills over the pre-kindergarten year. The findings of this study identify the non-instructional factor of behavior regulation to effect literacy development over time.

Moving from behavior to parental involvement, the five year longitudinal study by Sénéchal and LeFevre, (2002) followed participants from pre-kindergarten to grade three examining the effects of parental involvement in the development of a child's reading skills. Participants were 168 four to five year olds chosen from three schools in Ottawa, Ontario, Canada from middle- and upper middle-class families. These schools all shared a common

mandate emphasizing self-directed learning, integrated curriculum, parent/community involvement, and innovative approaches to teaching and learning. Participants were examined from pre-school to grade three based on literacy experiences, language, and emergent literacy skills. In the beginning of the study, parents completed a checklist and questionnaire. Participants were tested individually in their schools during the first half of the school year using assessments for language and emergent literacy. Further assessments of reading skills were conducted near the end of the school year in grades one and three. Sénéchal and LeFevre, (2002) find that children's "exposure to books" (p. 450) related directly to their development of vocabulary and listening comprehension skills. Parent involvement in teaching children about reading and writing words was related to the development of early literacy skills, where, early literacy skills directly predicted word reading at the end of grade one and indirectly predicted reading in grade three, and word reading at the end of grade one predicted reading comprehension in grade three. These findings identify the non-instructional factors of early exposure to books, parent involvement, and early literacy experiences directly relate to a child's reading fluency.

This next five year longitudinal study focuses on participants from grade one to grade five. Tafa and Manolitsis (2008) examine the literacy profile of Greek "precocious readers" (p. 166) to determine whether there is a difference between "precocious" and "non-precocious" (p. 166) reading performance in the areas of reading, spelling, and phonological awareness. Precocious readers are children who are able to read fluently before they begin kindergarten without being taught. The participants in this study include 25 kindergarten students: 13 precocious and 12 non-precocious readers. In this five year longitudinal study, a large battery of tests were administered in grades one and two and then again at grade four. Tafa and Manolitsis (2008) find that precocious readers' initial advantage in reading comprehension and spelling

“remains stable” (p. 179) until second grade; however, the precocious readers’ phonological-awareness “remains superior” (p. 179) to the non-precocious readers. The results also show that the literacy development of the two participant groups follows the same path to reading, but the precocious readers moved along the path more rapidly than the non-precocious readers.

Therefore, this study identifies the non-instructional factor that students who enter school with advantages in reading will outperform over time the students who enter school without the same advantages.

Lastly, a seven year longitudinal study following participants from grades one to seven by Tunmer, Chapman, and Prochnow (2006) examine whether “reading-related variables at school entry predict later reading achievement” (p. 184). Participants’ were 76 students entering kindergarten in 16 different urban schools in New Zealand. Assessments were administered to the participants during the first and seventh year. The first assessment battery measured phonological sensitivity, grammatical sensitivity, receptive vocabulary, letter identification, and verbal working memory. The seventh year second assessment battery of assessments measured letter sound patterns, context free word recognition ability, and reading comprehension. The researchers also obtained personal data and information on family background of the participants. Tunmer, Chapman, and Prochnow (2006) find that participants from low-income backgrounds were “less literate” (p. 198) than children from advanced backgrounds. The researchers also find that the average reading deficit of the participants is two years, four months. These findings identify the non-instructional factor of family background to impact literacy development over time.

Short Term Instructional Factors for Literacy Development

This next set of reviews focus on studies related to the instructional factors identified in the longitude research. These studies compare the short term effects of the identified instructional factors related to their long term instructional effects. These studies are arranged in order of the instructional factor they address.

The next six studies examine the short term effects of reading instruction beginning at an early age and the content/curriculum being taught increasing literacy development. The study by Missal, McConnell, and Cadigan (2006) follows students throughout their pre-kindergarten year. The purpose of their study was to “evaluate the literacy skill growth of groups’ [of] preschool-aged children with and without risks for acquiring literacy skills” (p. 5). Participants were 69 diverse pre-school students with varying literacy skills within eight different schools in two large urban school districts. The students were assessed using the Individual Growth and Development Indicators (IGDIs); this assessment monitors students over time to “determine if they are on-track to meeting [sic] established goals” (p. 5). The IGDI assessments include picture naming, rhyming, and alliteration. All three IGDI assessments were administered at monthly intervals five times from winter to spring in the participants’ pre-kindergarten year. The material measured was a part of the pre-kindergarten curriculum which meant students were being taught and given time to practice their skills throughout the year. Missal, McConnell, and Cadigan (2006) find that using “IGDI to monitor growth and development” (p. 15) at the preschool level is “beneficial” (p. 15) because “individual children gained skills on all measures at a noteworthy rate” (p. 15). The researchers also conclude that by “providing children with more access and additional exposure to relevant classroom variables [at an early age], it might be possible to accelerate their early literacy development” (p. 17). These findings relate to my research

question in that they find the instructional factor of specific early reading instruction to positively affect literacy development.

Massaro (2012) researches the possibility of children reading as infants, before pre-school, and provides a tool to use in developing literacy skills in infants. Massaro argues that if infants can learn speech at a young age, than they can read at a young age as well, “most children hear speech prenatally and participate in a world of spoken language” (p. 324). Massaro provides a definition for literacy, “the ability to use written language to function seamlessly in a literate culture, to pursue goals independently and to acquire knowledge required for a successful life” (p. 324). Massaro’s research reveals that at the time of this study, “30 million people in the United States have no more than the most simple and concrete literacy skills” (p. 324). Massaro identifies a factor that he feels may contribute to this high number of low literacy skills: many children are not provided with explicit reading experiences until formal schooling begins, usually at age five. Massaro provides research that indicates 90% of brain growth occurs before the age of six years; these findings indicate that infants have the capacity to learn more than they are being asked to learn during that time. Massaro proposes using Technology Assisted Reading Acquisition (TARA) to allow infants to learn how to read along with learning how to speak. This technology device would always be in view of the infant and would “automatically recognize a caregiver’s speech and display a child-appropriate written transcription” (p. 326). Massaro argues TARA can be successful in developing reading skills in young children because “infants clearly have the capacity to perceive, process, and learn semantic components in spoken language” (p. 330). The implications for this research include a possible new program designed to teach infants how to read and the creation of competent readers who can decode and spell

words before starting kindergarten. Further implications suggest that learning how to read at such an early age may impact a student's long term literacy development.

Although Massaro (2012) is looking to change literacy instruction for infants, 20 years prior to his efforts, researchers were explaining the need for early intervention programs with young children in order to impact their literacy development. Bayder, Brooks-Gunn, and Furstenberg (1993) have researched the "early warning signs of functional illiteracy" (p. 816). At the time of their study, the number of adults who were not functionally literate in the United States was estimated to be 54 to 64 million people. The researchers aimed to identify early predictors of adult literacy levels that could be used to identify potential high-risk groups of low literacy students in early childhood, middle childhood, and early adolescence. The participants of this 20-year follow-up study (the study began with the children of the teenage mothers) included 250 teenage mothers and their children from Baltimore; the mothers were ranging from the ages of 18 to 21. This study used a "document literacy test (conventional and contemporary)" (p. 820) to assess literacy levels. The contemporary assessment measured the ability of the participants in using common literacy-dependent tasks, such as the ability to use written documents. The participants were given a questionnaire of 22 items regarding 11 brief documents as the document literacy data. This study examined literacy scores related to family environment, development, and educational career factors in early childhood, middle childhood, and adolescent students. The results of this study show that only one-fifth of the participants have literacy skills required to complete every day advanced tasks such as finding information in an almanac and interpreting charts and graphs. The major implication of this study is the "significance of factors measured in early childhood in predicting literacy levels measured in young adulthood" (p. 827). These findings further implicate that early intervention programs for

early childhood may result in literacy gains throughout the child's education, thereby enhancing their literacy abilities in adolescence and adulthood.

Schuster (2012) also researches instructional factors that may significantly impact literacy development. This researcher measured the reading ability of incoming college freshmen compared to low literacy adults, assessing the participants based on seven reading components "crucial for successful reading" (p. 33): phonemic decoding, word recognition, vocabulary, WMS, reading fluency, listening comprehension, and reading comprehension. Schuster determined that students must first learn how to decode words in order to read words in a sequential order: "the faster individuals can recognize words, the faster and more accurate they will be in reading a test" (p. 34). The findings of this study indicate that adults with low literacy levels had difficulty with the early developing reading components, while incoming college freshmen had a stronger vocabulary and reading comprehension path than did the adults with low literacy levels. The implications of this study are that "word recognition does not make a strong contribution on reading fluency once paths between WMS and vocabulary with reading fluency were included in the model" (p. 83). The instructional factor identified by this study is that early reading development, especially including formal instruction, is imperative for the development of adult literacy.

This next research study conducted by Cunningham and Carroll (2011) examines whether children who are taught to read later in childhood (ages 6-7) make faster progress in literacy than children who are taught to read at a younger age (ages 4-5). Participants were 61 children ranging from ages 4-9 years. The children were split into two groups: "Steiner-educated" (p. 478) children (age 7-9) and standard-educated (age 4-6). These students were tested three times during their first year of reading instruction; 19 children were then tested again at the end of their

second year of reading instruction. The tests administered measured word reading ability, home literacy environment, receptive vocabulary size, letter-sound knowledge, ability to delete and blend sounds, and the York Assessment of Reading for Comprehension. Teachers also completed a questionnaire. The results of this study indicate that the younger children (ages 4-6) showed similar or better progress in literacy skills than the older children (ages 7-9). The researchers state that these results were attributed to “more consistent and high-quality synthetic phonics instruction” (p.486) administered in standard schools. These findings indicate that phonics instruction is imperative for young readers. Furthermore, literacy instruction is beneficial when it is started at a young age. Both of these factors could be imperative in enhancing students’ reading skills at a young age, thereby, decreasing the low reading levels of adolescents and adults.

This next study by Beach and Young (1997) shows the short term effects of print-references in increasing literacy development by looking at how the literacy development of kindergarteners can change based on the classroom approach and resources used. Participants were 102 kindergarten children in six classrooms at three schools within two school districts in the southwest. The study was conducted in classrooms representing different “theoretical orientations” (p. 244) to literacy development. These orientations included holistic, traditional, and transitional teachers. The assessments included: the Recognizing Literacy Behavior subtest of language awareness, the concepts about print test, a writing/rereading test, knowledge and discrimination of letters, phonemic awareness tests, auditory blending task, isolation and manipulation of phonemes, use of graphic-phoneme correspondence knowledge, a letter substitution task, and word reading tasks. The data were collected throughout the school year from November to April. The researchers find that both the home and school context of literacy

practices play a role in a child's literacy development. Instruction in phonemic awareness allowed children to be able to read more words and manipulate sounds to identify new words. The researchers noted that the emphasis of reading and writing in traditional classrooms is very conventional while the reading and writing in holistic classrooms consists of more meaning construction activities. The researchers also found that a child's literacy development enhances when kindergarten teachers modeled reading and writing using Big Books, interactive writing, and experience charts. This study relates to my research question in that it identifies the instructional factor of the content/curriculum being taught by using print-references in the kindergarten classroom as significantly impacting literacy development over time.

These next three studies focus on the short term effects of comprehension increasing literacy development. Sabatini, Shore, Sawaki, and Scarborough (2010) seek to determine an instructional factor that may significantly impact literacy development. The researchers examined the "Simple View" model of reading, where "reading consists of word recognition and linguistic comprehension, and...each of these components is necessary for reading, neither being sufficient in itself" (p. 122). The goal of this study was to examine the interrelationships among the Simple View components and suggest additional factors identifying their relationship to reading comprehension. Participants were 476 adults with ages ranging from 16 to 76, all of the participants scored below a 7th grade reading level on the "screening test of sight word recognition" (p. 124). The study used 13 tests to measure the reading and language skills of the participants. The results provide "evidence for distinctions" (p. 125) in word recognition, fluency, language comprehension, and vocabulary skills as components of reading. The results of this study suggest that level of word recognition and language comprehension ability appear to be sufficient indicators in reading comprehension among adults with low literacy.

Another research study designed to determine an instructional factor that may significantly impact literacy development is by Mellard (2013) who researches effective instruction in adolescent and adult literacy by investigating several issues related to adult literacy. These issues include “internal and external barriers to literacy” (p. 13), instructional methods, and implications for literacy programs. In his study, Mellard (2013) identifies several literacy skills that adolescents and adults struggle with: reading comprehension, fluency, vocabulary, and language comprehension. Mellard (2013) and his colleagues determined that oral reading fluency is an important reading sub-skill based on the literacy skills the adolescents and adults were struggling with. Mellard’s (2013) analysis also identified “word reading skill” (p. 13) as the most important predictor of fluency, with vocabulary and auditory working memory as “facilitating elements” (p. 14). Mellard (2013) suggests that “targeted instruction” (p. 14) in these areas could reduce frustration levels in struggling adolescent and adult readers and perhaps even improve their reading comprehension skills.

Before Mellard (2013) investigated issues related to adult literacy, he worked with Hock (Hock & Mellard, 2005) to a focus on specific reading comprehension strategies that may impact literacy development. Hock and Mellard (2005) conduct a study designed to identify reading comprehension strategies for use by readers that are most likely adolescent and adult learners with literacy deficits; they proceed by examining reading comprehension strategies such as paraphrasing, story grammar, self-questioning, visual imagery, “visual interpretation”, and “multiPass” (p. 194). The researchers provide their definition for reading comprehension as “a collective term that describes the result of grasping the meaning from a text with one’s intellect, a task that involves many skills” (p. 193). Four literacy measures were used for this study: ABLE-form E-Level 3, CASAS Employability Competency System, GED, and the eighth-grade

level National Assessment of Educational Progress (NAEP). Participants were a panel of six analysts, two practitioners, and four researchers. The procedures used in the study included practice scoring, decision rules, scoring, scorer agreement and frequency analysis, and aligning intervention strategies. The researchers find that the most important reading comprehension strategies for use by adolescents and adults are summarizing and drawing inferences. An important implication of this study is that direct instruction in the skills of summarizing and drawing inferences would likely benefit low literacy level adults, but instruction in knowing how and when to use a particular strategy may also make a positive impact on readers: “a proficient reader must be able to self-regulate reading behavior” (p. 198).

This next study compares adults’ and children’s literacy development in order to determine an instructional factor: phonological awareness, which may significantly impact literacy development. Jimenez, Garcia, and Venegas (2010) conduct a study comparing phonological processes of adults and children with low literacy abilities by assessing participants with and without reading disabilities. The 150 participants ranged from the age of seven to 77 and were organized into four different groups which included 53 low literacy adults, 29 reading disabled children, 27 “younger normal readers” (p. 3) at the same reading level as the other participants, and 41 “normal readers” (p. 3) the same age as the reading disabled group. The assessments used in this study included the standardized reading skills test subsets; word reading and pseudo-word, reading level match design, and test of phonological awareness subsets: isolation, deletion, segmentation, and blending. An analysis of variance (ANOVA) was used to factor the “reading disabled vs. normal readers vs. younger normal readers vs. low literacy adults” (p. 4). The ANOVA showed that “there were significant differences between all groups” (p 8). The low level adults and reading disabled children were found to have a deficit in

phonological awareness (PA). The study shows that “low literacy adults and reading disabled children did...show a deficit in PA, and this suggests that they are atypical and deficient in the reading processes tapped by the tasks and that these deficits may explain their great difficulty in learning to read” (p 12). The educational implication and instructional factor identified in this study is that the stimulation of PA in literacy could be effective in improving students’ reading skills.

Short Term Non-Instructional Factors for Literacy Development

This study conducted by Geske and Ozola (2008) describes factors influencing literacy development at the primary school level. The researchers used the Progress in International Reading Literacy Study (PIRLS) assessment to obtain their data. Participants were 3019 grade four students from rural schools and small towns. These students completed reading literacy tests and surveys, their parents and teachers also filled out questioners. The results of the research showed that girls had better results in reading literacy than the boys. Geske and Ozola (2008) also found many factors influencing literacy development at the primary age. They found that the socioeconomic position of a family influences students’ reading levels. Another implication of this study is that students who read different stories, poetry, parts of fiction books or plays at least once a week at school improved students reading levels. Looking at these results, the researchers suggested that teachers “should stimulate students’ reading of full texts at the primary school level and parents should promote reading outside of school” (p.75).

Summary of Review

This literature review examined three aspects of the research question: research on longitudinal studies into literacy development, instructional factors influencing literacy development, and non-instructional factors influencing literacy development. The studies cover a range of participants from infants to adults. The participants were from rural and suburban areas all of different literacy ability levels. The studies all included boy and girl participants, and the data were represented in a mixed fashion including quantitative and qualitative results. These studies presented research findings for the topic of longitudinal studies identifying specific factors that significantly impact literacy development, specific instructional and non-instructional factors impacting literacy development, and specific teaching strategies that can be applied in the elementary level to strengthen those factors. The longitudinal nature of the above studies ranged from two to fourteen years.

Chapter 3: Methodology

Data Collection

I have chosen to answer this question of instructional or other factors that significantly impact literacy development over time by conducting a synthesis of the research. For the research synthesis, I have first searched the leading educational databases for the latest research, specifically longitudinal studies, in order to identify any such instructional and non-instructional factors that may impact literacy development over time. Next, I have also reviewed short term research related to possible specific instructional factors that may significantly impact literacy development. My findings will be based on a thorough analysis and synthesis of the found research. From the research of this synthesis, I will create professional development for elementary teachers exposing those factors and revealing their long term and short term effects as related to reading instruction. This professional development may help increase awareness of adolescents and adults not being able to read, while also determining what teachers may do to help impact literacy development over time. First, though, the remainder of this chapter will present the data analysis.

Data Analysis

The analysis process is to first examine the longitudinal studies related to literacy development and determine the instructional factors then the non-instructional factors emerging from the data. The process continues with an examination of the short term effects of the

instructional and non-instructional factors found during the longitudinal research analysis. The analysis process culminates with the synthesis of findings to produce results that address the research question for this thesis.

Two categories of the review examine instructional factors for literacy development, one for long term and one for short term. Analysis of these categories shows one instructional factor to be the curriculum itself, including the type and intensity of the content (Byrne, Samuelsson, Wadsworth, Hulslander, Corley, Defries, & Olson, 2007; Cunningham & Carroll, 2011; Beach & Young, 1997; Schuster, 2012) and inclusion of print references; (Piasta, Justice, McGinty, & Kaderavek, 2012). Analysis shows another instructional factor to be the start time of formal reading instruction. The impact of starting reading instruction at an early age appears to be an increase in literacy development over time (McCormick & Haack, 2010; Bryne et. al., 2007; Piasta, Justice, McGinty, & Kaderavek, 2012; Massaro, 2012; Missal, McConnell, & Cadigan, 2006). Another instructional factor is not just starting formal instruction early in life, but also providing early intervention programs; these types of programs appear to be beneficial in increasing a student's later literacy development (Bayder, Brooks-Gunn, & Furstenberg, 1993).

In addition to curriculum, another instructional factor that appears to provide long-term impact on literacy development over time is direct instruction on reading skills (Frost, Madsbjerg, Niedersoe, Olofsson, & Sorensen, 2005; Bast & Reitsma, 1998), with specific skills being word decoding skills (Verhoeven & Leeuwe, 2008; Mellard, 2013), vocabulary development (Chain & Oakhill, 2006), and comprehension through summarizing and making inferences (Hock and Mellard, 2005). Phonics instruction in the early grades is also found to be an instructional factor impacting literacy development over time (Xue & Meisel's, 2004; Cunningham & Carroll, 2011). Phonics instruction includes phonological sensitivity (Longhin,

Burgess, & Anthony, 2000; Jimenez, Garcia, & Venegas, 2010) and phonemic awareness (Juel, 1988). Findings also show that two existing literacy programs (Literacy Collaborative and TARA) positively impact literacy development over time (Biancaroas, Byrk, & Dexter, 2010; Massaro, 2012).

The two other categories of the review examine non-instructional factors for literacy development, one long term and one short term. Results of this analysis find that several non-instructional factors appear to impact literacy development over time. One factor is a student's self-perception of literacy (Chapman, Massey, Tunmer, & Prochnow, 2000), and another is behavior regulation (McClelland et al, 2007). Several non-instructional factors found in this synthesis relate to a student's home life, including socioeconomic status (Tunmer, Chapman, & Prochnow, 2006; Geske & Ozola, 2008), literacy experiences with books and practicing early literacy skills at home (Connor, Morrison, & Katch, 2004; Geske & Ozola, 2008; Sénéchal & LeFevre, 2002). Only one study (Geske & Ozola, 2008) identifies family socioeconomic status as a short-term non-instructional factor that may influence literacy development. However, while SES may be a factor, the study concludes that its impact is only "somewhat significant" (Geske & Ozola, 2008, p. 4). One other non-instructional factor found in this synthesis relates to a student's school life; school placement (high or low ability group) appears to carry a very long term impact (Foster & Miller, 2007; Tafa & Manolitsis, 2008).

Chapter 4: Results and Application

Results of Review

Results of this research synthesis show instructional factors for literacy development to be the curriculum itself, including the type and intensity of the content and the inclusion of print references. Another instructional factor is the start time of formal reading instruction, while providing early intervention programs is still another factor. Findings show other instructional factors to be direct instruction of reading skills, with specific skills being word decoding skills, vocabulary development, and comprehension through summarizing and making inferences. Phonics instruction in the early grades is also found to be an instructional factor impacting literacy development over time; phonics instruction includes phonological sensitivity and phonemic awareness. Findings also show that certain packaged literacy programs also positively impact literacy development over time. Other results indicate that non-instructional factors for literacy development include student self-perception of literacy, behavior regulation, and a home life with a variety of literacy experiences. One other non-instructional factor found is school placement (high or low ability group).

Application of Results to a Professional Development Project

The results from this research study indicate that there are several instructional and non-instructional factors which impact literacy development over time. These findings have relevance and application to elementary teachers because they offer teachers an understanding of how

significant their work is for helping students have a positive and strong literacy development, and specifically of factors that impact literacy development over time. These findings also reveal some strategies and possible programs to use in the classroom in order to decrease the number of adolescents and adults who read at the *Below Basic level*. The most efficient way to distribute these results to teachers is through a professional development project which will take the form of a video displayed on Teacher Tube (<http://www.teachertube.com>).

Design of Professional Development Project

To create a final product from this research, I will create professional development in the form of a video displayed on Teacher Tube for teachers of grades pre-kindergarten to grade three to learn the instructional factors that may have long term impact on students' literacy development. This video will be a 10 minute video on Teacher Tube that can be watched anywhere and at any time. The primary intention of this video is to address these instructional and non-instructional factors over which teachers may have some control in order to increase the awareness of educators and perhaps change their teaching practices so that the reading level of future adolescents and adults may increase. I will also inform the teachers of instructional practices associated with those factors over which they may exert influence. The intent of this professional development is to become proactive and assist teachers to be proactive in the prevention of adolescents and adults with low reading ability.

Literacy coaching video goals and objectives.

The goal of this professional development workshop is to increase the knowledge of elementary teachers in the area of literacy development over time. The objectives and learning outcomes are such that as a result of having participated in this workshop, elementary teachers will be able to identify and explain specific instructional and non-instructional factors impacting literacy development over time, use knowledge gained during the professional development workshop to guide instructional planning, and collaborate with other teachers to develop meaningful lesson plans which they could implement in their elementary classrooms.

Proposed audience and location.

The intended audience for this workshop includes elementary teachers, specifically those teachers who teach pre-kindergarten to grade three who work for the same school district. The video will be available any time of the day on any computer with access to the internet. The participants watching this video will need to have access to a computer and internet. The advantage of this professional development format is that teachers may access and view the material at their convenience and from their preferred location.

Proposed video format and activities.

The proposed format of this professional development is a ten minute video preferred for display on Teacher Tube. This self-directed video will appeal to elementary teachers, specifically

those who teach pre-kindergarten to grade three. The content of the video (see Appendix) included listing the instructional and non-instructional factors which research has shown to impact literacy development over time. The video will focus on the instructional factors because those are the factors over which teachers may exert some control. For those viewers already aware of these instructional factors and already implementing them into their existing classroom curriculum, the video will serve as positive encouragement and reinforcement for them, letting those teachers know they have been doing a good job in helping to decrease the number of future adolescents and adults with low reading levels. For those viewers not already aware of these instructional factors, the video will serve as a means for encouraging these teachers to begin implementing these instructional factors into their existing classroom curriculum, with the rationale that they may impact the number of future adolescents and adults with low reading levels.

Proposed resources for video.

To conduct this video, the facilitator will need access to a computer, a webcam, and voice recording. Participants watching the video will need access to a computer and internet. The participants will watch the ten minute video on Teacher Tube at their leisure. They will need paper and a pen to write down the instructional and non-instructional factors impacting literacy development. They will also need access to an email account in order to submit comments and an evaluation.

Proposed evaluation of video.

Evaluation of the professional development video will include a request on the video itself for viewers to post comments on the Teacher Tube website. In addition, viewers will be shown the presenter's email address and told they may send their questions, comments or suggestions directly to the presenter. Viewers will also be encouraged to submit their own stories of long-term impact on their students.

Video Ties to Professional Standards

This professional development video ties to Standard 1, 2, and 6 of the International Reading Association (IRA) *Standards for Reading Professionals (2010)*.

Standard 1: Foundational Knowledge

Candidates understand the theoretical and evidence-based foundations of reading and writing processes and instruction.

Element 1.2: Understand the historically shared knowledge of the profession and changes over time in the perceptions of reading and writing development, processes, and components.

Participating teachers will meet this Standard when they view the video and learn what research shows about instructional factors that impact literacy development over time. The participating teachers may demonstrate this foundational knowledge and their perceptions of it by incorporating research-based strategies into their instruction.

Standard 2: Curriculum and Instruction

Candidates use instructional approaches, materials, and an integrated, comprehensive, balanced curriculum to support student learning in reading and writing.

Element 2.2: Use appropriate and varied instructional approaches, including those that develop word recognition, language comprehension, strategic knowledge, and reading/writing connections.

Participating teachers will meet this Standard when they take the information they learn and incorporate the instructional factors into their existing classroom curriculum, especially emphasizing those that develop word recognition and language comprehension.

Standard 6: Professional Learning and Leadership

Candidates recognize the importance of, demonstrate, and facilitate professional learning and leadership as a career-long effort and responsibility.

Participating teachers will meet this Standard when they make the personal choice to view this professional development video. This action demonstrates their commitment to professional learning as a career-long effort and responsibility.

Chapter 5 Discussion and Conclusion

Overview of Study Findings

Moore, Bean, Birdyshaw, and Rycik (1999), in their Position Statement for the International Reading Association on Adolescent Literacy, remind educators that “early achievement is not the end of the story...there are developmental stages of reading and writing” (p. 99) into adolescence and adulthood. This study asks the question of the impact of instructional and non-instructional factors on literacy development over time. To answer the question, a thorough and extensive review of the literature on longitudinal studies of literacy development was conducted. A synthesis of the research produced several related findings. First, instructional factors influencing literacy development over time include curriculum (content being taught), comprehension (word decoding/vocabulary), print-references (comprehension/reading/spelling), word recognition, fluency, and phonics (phonological awareness/phonemic awareness). The starting time for formal reading instruction and providing early intervention programs are other instructional factors. Findings also show that certain packaged literacy programs also positively impact literacy development over time. Other results indicate that non-instructional factors influencing literacy development over time include reader self-perception, behavior regulation, and a home life with a variety of literacy experiences. One other non-instructional factor found is school placement (high or low ability group). These findings are applicable for the professional development of elementary teachers, specifically, pre-kindergarten to grade three, and therefore will be distributed to them through a ten minute Teacher Tube professional development video.

Significance of the Findings

The several findings from this research synthesis are significant to classroom practice, especially the practices of elementary teachers in grades pre-kindergarten to grade three, because teachers have control and may exert influence over several of these identified factors that impact literacy development over time. Therefore, by knowing these findings, elementary teachers have knowledge of the long-term impact of their work and will be able to shape their instruction to explicitly address these instructional factors in order to influence the reading levels of future adolescents and adults.

Limitations of the Findings

Although the research synthesis has answered the question of instructional and non-instructional factors impacting literacy development over time, there are a few limitations to the findings. The extensive literature review only discovered 30 articles; 18 longitudinal and 12 short term related to this topic. Also, a few of the longitudinal studies only assessed participating students a small number of times, which may have skewed the results. Most of the longitudinal studies found focused on pre-kindergarten students through grade three. Only a few longitudinal studies followed participants for more than three years, and only one study followed participants from pre-kindergarten to grade twelve.

Conclusion: Answer the Research Question

The research question formulated for this thesis research project is, based on longitudinal studies of literacy development, what are instructional or other factors that significantly impact literacy development over time? To answer this research question, an extensive review of literature related to instructional and non-instructional factors of literacy development over time was conducted. The findings of the research indicate key instructional factors to be curriculum, especially its content of word decoding skills, vocabulary development, word recognition, fluency, phonological awareness, phonics, and phonemic awareness -- all delivered through extensive print-references. The starting time for formal reading instruction, providing early intervention programs, and certain packaged literacy programs are also instructional factors. The findings of the research also indicate key non-instructional factors to be reader self-perception, behavior regulation, a home life with a variety of literacy experiences, and school placement (high or low ability group).

Recommendations for Future Research

Even though the results of this research synthesis yield several findings connected to instructional and non-instructional factors influencing literacy development over time, the limitations of the findings of this synthesis are little existing research into longitudinal studies. Future research on instructional factors impacting literacy development over time should be conducted so that educators can identify more instructional and non-instructional factors impacting literacy development and possibly even narrow down the list of identified factors

noted in this research synthesis. The limitations of the findings also reveal a lack in some longitudinal studies data collection. Future longitudinal studies research could require yearly assessment measures or data collection several times a year to create more closely monitored results. Lastly, limitations of the findings further reveal a brief length in the longitudinal studies found. Future research might limit the longitudinal studies to four or more years. Future research could also conduct a longitudinal study following participants from pre-kindergarten to grade twelve to yield more sustained results.

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APPENDIX A: Program for Professional Development Video

The format of this professional development is a ten minute video on Teacher Tube (<http://www.teachertube.com>) intended for elementary teachers, specifically those who teach pre-kindergarten to grade three.

The video will start by asking the participants if they feel unappreciated, if they see the difference they make in their students life, if they know what long term affects the content they teach effects the students long term literacy development.

VIDEO: Instructional Factors Impacting Literacy Development over Time 10 minutes

Video Contents

Question to viewer: have you ever wondered about the long term impact of what you do every day in the classroom? This video will show you some of the factors that produce long term impact on literacy development.

Presentation of instructional factors related to literacy development over time:

- Curriculum (content being taught)

- Early literacy instruction

- Comprehension (word decoding/vocabulary)

- Print-references (comprehension/reading/spelling)

- Word recognition

- Fluency

- Phonological awareness

- Phonics

- Phonemic awareness

- Specific literacy programs: The Literacy Collaborative (LC) Program;
Technology Assisted Reading Acquisition (TARA)

- Specific comprehension strategies: Summarizing, Making inferences

Presentation of non-instructional factors related to literacy development over time:

- Reader self-perception

- Home life/family background

- Socioeconomic status

- Parental involvement/early literacy experiences at home

- Behavior regulation

If the participants are already aware of these instructional factors and implementing them into their existing classroom curriculum they have been doing a good job in helping to influence the number of adolescents and adults who read at the *Below Basic level!*

The video will end with an invitation for viewers to email the producer with comments and suggestions.