PREVENTING THE SUMMER SLIDE: USING CLOSED CAPTIONING AND SAME-LANGUAGE SUBTITLING ON TELEVISION AS A LITERACY TOOL IN THE HOME TO INCREASE READING ACHIEVEMENT

BY

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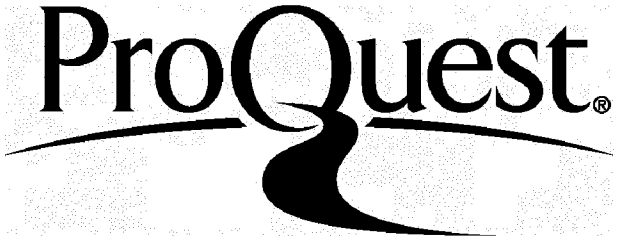

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To the one who watches over all of us and wishes only for love and peace. My wish is that this research will be taken and put into action to help end illiteracy, create more opportunity, and especially grow readers who love to read words everywhere, even words on the TV screen.

DEDICATION

To my own little readers Maguire and Penelope, who bring me so much joy and who read books, magazines, signs, everything—and especially love to read TV.

ABSTRACT

PREVENTING THE SUMMER SLIDE: USING CLOSED CAPTIONING AND SAME-LANGUAGE SUBTITLING ON TELEVISION AS A LITERACY TOOL IN THE HOME TO INCREASE READING ACHIEVEMENT

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This quantitative quasi-experimental comparative study asked to what extent the use of closed captioning and same-language subtitling used during regular television programming and on movies on DVD may be a supplementary literacy tool in the home during the summer months to increase reading achievement and prevent the "summer slide" (or loss of learning) that typically occurs during summer months when students are not in school. Parents of first graders from two Title 1 schools in the greater Seattle urban area constituted the voluntarily sample in this study. The treatment group used closed captioning and same-language subtitling as a literacy tool in the home during the summer months, while the control group did not use this tool in their homes during the summer months. All parents (treatment and control) gave permission to the school to report their child's first grade spring end- of-year (EndYear1) reading oral fluency scores and fall beginning-of-year (BeginYear2) oral reading fluency scores as measured by the DIBELS instrument commonly administered in schools. All parents also answered a parent survey about their child's reading and viewing habits during the summer. Treatment and control group DIBELS scores were compared by computing a 2x2 ANOVA. The treatment group did outperform the control group but these mean scores did not yield significant results. However, *t* tests and effect sizes were calculated on change scores and provided

promising results. The findings indicated that most of the children in the treatment group increased their fluency scores over the summer unlike the control where several experienced the summer slide in reading. This study is important because it is the first ever conducted in the home. Future studies need to be conducted with larger sample sizes to more definitively reveal the extent to which closed captioning and same-language subtitling could be used in the home as a practical, readily available, and cost-effective tool to increase reading achievement and prevent the summer slide in all types of children from all different backgrounds during the summer months.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

I believe television is going to be the test of the modern world, and that in this new opportunity to see beyond the range of our vision we shall discover either a new and unbearable disturbance of the general peace or a saving radiance in the sky. We shall stand or fall by television—of that I am quite sure. —E. B. White (1938)

Introduction

It is widely agreed upon today that learning to read is crucial for success in school and in life. During World Literacy Day in September of 2014, UNESCO announced that there are still over 774 million adults (age 15 years old and older) on this planet who are illiterate, meaning unable to read and write. While 62% of this illiteracy rate is found in Southeast Asia, in the United States we still have many Americans who are illiterate. In fact, according to the U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics (2007) there are 32 million people who are illiterate in the United States. This report also shared that 63% of prison inmates are illiterate, addressing the issue that once again education is key. Many studies suggest the more education one has, the greater probability for employment, and the less likelihood of imprisonment (Trelease, 2013). Students who experience the least success in classrooms at any level usually come from homes and schools with a poor print climate—few books, magazines, newspapers, etc. (Evans, Kelley, Sikorac, & Treiman, 2010). However, 92% of homes own a DVD player and in 99% of homes in the United States today, there are one or more televisions. On every television purchased after 1993, there is a closed-captioning feature (U.S. Department of Commerce, US Census Bureau, 2007). This feature may assist in increasing reading literacy.

There has been great debate about the role television should play in a child's life and many studies on how it impacts learning. There is much research to support the idea that excessive TV watching decreases physical activity, develops unhealthy eating habits, lowers school performance, causes sleep deprivation, adds to the risk of attention deficit hyperactivity disorder ADHD, and, when exposed to violent TV shows, increases aggressive behavior in children (Borzekowski & Robinson, 2005; Christakis, Zimmerman, DiGiuseppe, & McCarty, 2004; Fitzpatrick et al., 2014; Moses, 2008; Owens et al., 1999). The American Academy of Pediatrics Association (2014) recommends no screen time for children under the age of 3 and 10 hours or less a week for youth above the age of 3. However, the reality is that the TV is a well-loved object in the home.

According to parents, children 6 and under watch an average of 2 hours a day and research shows this can play a significant role in impacting learning (Moses, 2008). According to Trelease (2013), the average child watches 3 to 4 hours a day. This number does not include video games and other forms of screen time. By age 8, statistics show that 71% of children not only lived in a home with three televisions but also had a TV in their bedroom which added an additional hour of viewing (Trelease, 2013). This rate of TV watching grows as a child grows. According to Trelease (2013), "it's not the entertainment that softens the mind; it's the dosage" (p. 151).

Trelease (2013), along with other experts in the field of education, believe there is much to support the idea that children can benefit from television when the educational programming has specific goals in learning (Moses, 2008). Words or *on-screen print* used in the popular PBS show *Between the Lions* has been shown to increase early

literacy skills in young children (Linebarger, Kosanic, Greenwood, & Doku, 2004). We also must not forget Sesame Street with 30 years of programming—beloved by many children and families—that has helped increase school readiness in children, including literacy skills (Linebarger & Piotrowski, 2009).

These shows are just a few examples that support the idea that television can give a child an additional literacy experience in the home that may lead to even more success in school. Trelease (2013), who has empowered parents and educators for the past 30 years to help children to become avid lifelong readers by reading aloud to them, argues that television can be a useful learning tool in the home when used appropriately. He even believes that part of the reason the country of Finland has one of the highest literacy rates in the world is because of their in-home reading tutor, also known as the closed-captioning button (Trelease, 2013). However, there is yet to be research done on this topic in Finland.

India, a country that contains a third of the illiterate people in the entire world, has struggled to educate its people. Now after years of research, thanks to an organization called PlanetRead, India is increasing literacy skills by using same-language subtitling on Bollywood films (Kothari, 2012; Kothari & Bandyopadbyay, 2014). In a country where the education system is unstable and learning to read is often a luxury, children and adults all over the country are learning to read by listening to popular songs and matching them to the words on the screen (Kothari, 2010).

What if parents in the United States could rely on any age-appropriate television program that their children watched to do the same with the click of a button? By pushing the closed-captioning (CC) button on the TV, perhaps reading achievement could be

enhanced, as it is in India. The CC button just may become a supplementary household literacy tool and the United States could possibly attain a higher literacy rate, on par with some of the most literate countries in the world, like Finland. For in 2012, the United States only ranked 17 (or average) among the OECD countries in reading, according to the latest Programme for International Student Assessment (PISA). Most importantly, a child in a home living below the poverty level with a lack of print materials, or a child in a family with parents who are illiterate or speak a different language other than English, may have an added literacy experience in the home through the use of closed captioning. It is a possibility that parents/guardians from any background could feel empowered to use the CC button on their television to help their child be a more successful reader. This supplementary literacy tool, if found to increase reading achievement in children, could reach 99% of our children no matter their socioeconomic level, cultural background, or language proficiency.

Statement of the Problem

Our education system in the United States advocates striving for social justice and the empowerment of children to learn to read, write, and achieve. Children who have an inadequate beginning in reading often do not catch up (National Reading Panel, 2000). Creating proficient readers by the end of third grade has become so important that many states have enacted retention guidelines for children who do not meet reading standards. Retention—i.e., repeating the same grade level—is known to lead to low self-esteem and poor attitude at school, and so the downward spiral begins (Jimerson, Ferguson, Whipple, Anderson, & Dalton, 2002). One in six children who are not reading proficiently in third grade do not graduate from high school on time, a rate four times greater than that for

proficient readers (Hernandez, 2011). Too many children struggle when learning to read—and this is an essential skill for succeeding in school and in life.

Children who live in poverty are 1.3 times more likely as children who are not poor to struggle in reading and have less home experiences that contribute to early literacy development (Linebarger et al., 2010). Some students are entering schools in the United States today with rich literacy environments, many hours of conversational English language, and books read aloud to them from their earliest years, while many students lack these materials and experiences (Allington & McGill-Franzen, 2013). Many of these children who struggle to read do not speak English as their first language. During the summer months, when children are not attending school, the gap between advantaged and disadvantaged grows. These students often return to school after the summer months with a loss of skills due to the lack of educational opportunities—this is known as the "summer slide," "summer slump," or "summer setback" (Cahill, Horvat, McGill-Franzen, & Allington, 2013). This loss of learning over the summer months can leave educators feeling frustrated (Cahill et al., 2013). Low-income students lose more than 2 months in reading achievement, despite the fact that their middle-class peers make slight gains (Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996). If children are reading closed captioning on television during the summer, perhaps this could prevent this "summer slide" and possibly even boost their reading skills, particularly their oral reading fluency (ORF) scores.

Purpose of the Study

There are many issues affecting the *achievement gap* or *opportunity gap* and socioeconomic status is a huge part of the issue. Students who come from low-income

households often have fewer books, people to read aloud to them, fewer words being spoken in their home, attend fewer literacy experiences such as dramas/plays, and may have little access to technology (Zill, Moore, Smith, Stief, & Coiro, 1995). Technology is one of those factors that seem to unfortunately be widening this opportunity gap. Particularly with kids who are struggling to read, e-readers have been found useful as a tool to motivate, especially in boys (Miranda, Williams-Rossi, Johnson, & McKenzie, 2011). However, many children who come from low-income households do not have access to different kinds of print, let alone e-readers, and this affects their literacy development even by first grade (Dickinson, & Detemple, 1998). The use of closed captioning on televisions in 99% of homes would allow the experience of an e-reader in almost every home in the United States. This could increase our children's motivation and early literacy skills, helping them to be more successful in school and in life. With a click of a button, closed captioning could give access and empower all families to create print rich home environments, foster literacy experiences, and help their children to learn to read and therefore give them more opportunity, especially in the summer months.

Young people tend to experience learning losses when they do not engage in educational activities during the summer (Cahill et al., 2013). Research spanning 40 years shows that students typically score lower on standardized tests at the end of summer vacation than they do on the same tests at the beginning of the summer (Cooper et al., 1996; Downey, von Hippel, & Broh, 2004; Entwisle & Alexander, 1992; Heyns, 1978). More than half of the achievement gap between lower- and higher-income youth can be explained by unequal access to summer learning opportunities. Students from lower socioeconomic status lose 2 months on average of reading achievement over the summer

months while those from more advantage homes gain a month during summer (Cooper et al., 1996). As a result, low-income youth are less likely to graduate from high school or enter college (Alexander, Entwisle, & Olson, 2007).

The overall purpose of this study was to examine closed captioning and same-language subtitling on television for its potential usefulness as a literacy tool in the home in order to increase reading achievement, specifically oral reading fluency, during the summer months.

Research Questions

1. To what extent does using closed captioning and same-language subtitling on television in the home during the summer increase a child's oral reading fluency?
2. To what extent does using closed captioning and same-language subtitling on screen in the home during the summer prevent a decrease in reading achievement known as the "summer slide"?

Hypothesis

The hypothesis is that first grade students who watch words on television using closed captioning and same-language subtitling—i.e., they read and watch TV rather than only watch TV—will increase their reading achievement over the summer months. In other words, first grade students, both native English speakers and English language learners, who watch TV at home where on-screen print is available, will benefit by demonstrating increased reading achievement in the areas of oral reading fluency compared to similar children who do not watch closed captioning on TV during the summer months.

Theoretical Frameworks

The three theoretical frameworks that follow inform this study and will be more thoroughly articulated in Chapter 2.

Traveling Lens Theory

The *traveling lens theory* suggests that if print is too difficult or too easy, the reader will ignore it; however, when print content is of interest and cognitively challenging, the reader will pay attention to it (Linebarger et al., 2004).

Krashen's Theory of Second-Language Acquisition

Krashen's *theory of second-language acquisition* focuses on the idea that basic competence in the second language (L2) is a function of the amount of *comprehensible input* acquirers receive and understand as well as the degree to which they are provided with motivation to learn (Neuman & Koskinen, 1992).

Dual Coding Theory

The *dual coding theory* suggests that when two modalities—i.e., audio and visual content—are used in presenting information, one modality is usually chosen over the other or there is a switch between the two. This increases learning without overwhelming the learner (Linebarger et al., 2010).

Context of the Study and Overview of Methods

Design

A comparative quasi-experimental quantitative design was used to address the research questions in this dissertation (Shadish, Cook, & Campbell, 2001). This study took place in the home environment. First graders from one Title 1 school were in the treatment group and provided with the intervention while first graders from another

Title 1 school (similar in demographics and test scores) were in the control group. In the treatment group, children watched age appropriate television programming per parent discretion during the summer months using closed captioning/subtitling. The control group watched age-appropriate programming without closed captioning/subtitling during the summer months. A pretest-posttest design compared the children's spring end-of-the-year first grade oral reading fluency scores and their fall beginning-of-the-year second grade scores. A post parent survey also was administered to obtain information on factors such as language background, socioeconomic level, the home print environment, time spent reading over the summer, and time spent viewing television over the summer—other factors that can also have an effect on reading achievement.

Sample

Data originally were provided by 34 parents on their children (7- and 8-year-olds) who attended two eligible schools for federal funding due to the school's high percentage of students who received free and reduced lunch. These Title 1 elementary schools were in a Seattle suburb in the United States. Parents were recruited from one school (n = 18) and asked to encourage their child to read books during the summer (control condition), whereas parents recruited from the other school (n = 16) were asked in addition to use closed captioning and same-language subtitling on television in their home so that their child could "read TV" as well as read books during the summer (treatment condition). The researcher removed three of the 18 children in the control group from the study because parent input indicated that these three did in fact already "read" TV using closed captioning; hence, the control group data was for 15 children total. The researcher also removed one of the 16 children in the treatment group for not following procedures of the

study; hence, the treatment group data was for 15 children total as well. Participants were recruited with the help of the school's principal and classroom teachers. The goal was to get a somewhat equal representation of gender, socioeconomic range, reading level, and language background of children in each group. The treatment group had four English Language Learner (ELL) children and the control group (n = 15) had one ELL. There were three students in the treatment group with special needs and one child in the control group who had special needs. Regarding socioeconomic levels of each family in the group, the mean household income in the treatment was $102,555, while the mean of the control was $120,662. The treatment group had three children qualify for free and reduced lunch the control group had one. In the treatment group there were four Hispanic, one Pacific Islander, seven Caucasion, one Middle Eastern, one Indian, and one mixed race (Asian-Caucasian). In the control group there were two Hispanic participants, one African American, and 12 Caucasion students. In the treatment group there were seven boys and eight girls and in the control group there were three boys and 12 girls. The average age of the children in the treatment group was 7 years and 7 months and the average age in the control group was 7 years 6 months.

Variables

The main independent variable in this study was the students who watched closed captioning and same-language subtitling during regular children's programming during the summer vacation versus those who watched regular children's programming with no closed captioning and same-language subtitling during the summer vacation. Another variable present was language background because this is an important factor not only in learning to read, but also in previous studies about closed captioning. Since many

children who are ELLs tend to struggle with learning to read English, the research examined whether closed captioning is an effective tool to be used in the homes to support such children in increasing their reading achievement.

The dependent variables were the reading achievement test scores in the area of oral reading fluency, measured by the Dynamic Indicators of Basic Literacy Skills (DIBELS) test, which the school district collects as a regular part of its yearly assessment of student achievement. The pretest in oral reading fluency took place at the end of the first-grade school year in June. The posttest in oral reading fluency took place at the beginning of the second-grade school year in September. All of the tests were administered by the regular classroom teacher according to the testing directions and district requirements. Parents gave permission to the school for these test scores to be printed and reported to the researcher. The principals of each school provided the scores from the assessment test embedded into the regular operations of the school and district.

Instruments

The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) are a set of assessments used for universal screening and progress monitoring in Grades K-6. Each test is standardized, efficient and extensively researched (Good, Kaminski, & Dill, 2002). The DIBELS assessment is currently administered to over 2 million schoolchildren nationwide.

Parent Post Survey on Child's Home Reading (PPSCHR) was a survey created by the researcher to account for variables that may affect reading achievement. These included items on language background, socioeconomic level, the home print environment, time spent reading over the summer, attendance in summer educational

programs, and time spent viewing television over the summer—all factors that could have an effect on reading achievement. This instrument was vetted and piloted prior to the conduct of the study, then was completed by parents and submitted to the researcher for the study.

Procedures

Families of first graders were recruited with the help of the classroom teachers and the principal of the Title 1 schools to join a "Summer Reading Study to Help Prevent the Summer Slide." Parents of both groups were asked to sign a permission agreement that gave permission for the school to give a printout report of their first graders' end-of-year first grade DIBELS oral fluency test score and in June they attended a mandatory meeting where they were presented with information on the importance of summer reading. Parents attended the June mandatory meeting on "Preventing the Summer Slide" and each family could choose three books for their child to read over the summer. During this night the treatment group was given additional information on how to access the closed captioning at home on their screens using their cable company or their streaming device to access closed captioning as supplementary literacy tool to use in their home over the summer. If their child wanted to watch a DVD (at home or in the car) they were also given directions on how to access English subtitling under SETUP or Languages on the DVD menu. The treatment group was expected to troubleshoot any technical difficulties on their own or with assistance of their cable or online internet provider. A helpline number was provided to use if a problem occurred resulting in closed captioning not being displayed on the screen.

In the fall, the parents/guardians of the now second-graders in both the treatment and control groups were invited back to a meeting at the school. The Post Parent Survey on Child's Home Reading (PPSCHR) was administered to learn about the child's summer home reading habits. On this survey they were asked demographic information along with how much their child watched TV on a weekly basis, how much they were read to aloud, how many books were in their home, and how much they read independently—all contributing factors to literacy achievement. The principal reported the child's beginning-of-the-year second-grade DIBELS oral reading test scores at this time.

Parents signed permission for themselves and their child's information to be part of this study. They agreed to having the school provide a printout report from their children's teacher of their child's first grade spring end-of-year oral reading score on the DIBELS assessment and their child's second grade beginning-of-year fall oral reading scores.

Significance of the Study

General Significance

This study matters because it adds to the body of research that already supports using closed captioning and same-language subtitling as a literacy tool to increase reading achievement. Its findings may have an impact on (a) actions in real-world settings, (b) professional practice, (c) decision making or policy development, and/or (d) theoretical/conceptual knowledge to guide current practice and ground future research. Leaders in homes, schools, universities, government, non-profits, business, the world of entertainment, and research could use the findings to advance practices toward creating a more literate world.

Real-World Setting Significance

The major significance of this study is that it is the first study on this topic administered in the home in the United States. In all the cases where closed captioning and same-language subtitling was used as a literacy tool with youth, it was used either in a staged setting or in a classroom situation (Koskinen, Wilson, Gambrell, & Neumenn, 1993; Goldman & Goldman, 1988; Linebarger, 2001; Linebarger et al., 2004; Linebarger & Piotrowski, 2009; Linebarger et al., 2010; Neuman & Koskinen, 1992; Strassman, MacDonald, &Wanko, 2010). Since the home is where most children watch the majority of television, this provides a real-world authentic setting. Families may feel empowered to use closed captioning and same-language subtitling as a tool in the home to help their children learn to read and achieve. The use of this simple and free tool (in the sense that all newer televisions are equipped with closed-captioning capability) may allow extra practice for children to read and watch TV rather than just watch television. Since it is known the more a child reads during the summer the more he/she will achieve in reading, this extra practice may prevent the summer slide and may even increase reading achievement (Cahill et al., 2013). Instead of a child watching TV being viewed as a passive activity, it may turn into an active event. This authentic home environment for children who are non-native speakers of English may lend itself as a supplementary language and literacy tool. Giving more opportunity and access for exposure to print in a low-stress environment for children learning a new language may be critically important for English Language Learners in particular. These children may (a) lack adults in their homes who can read aloud to them in English and (b) have no access to books—two

factors known to highly correlate with reading achievement (Allington & McGill-Franzen, 2013).

The findings of this study also may offer an alternative to the e-reader in 99% of homes, which may prompt children of all language backgrounds to be more motivated to read. Children who often struggle or have difficulty focusing, like those diagnosed with ADHD, who can focus on a screen hours at a time but not on a book, may also benefit (Klass, 2011). The hope that all children from all different backgrounds would benefit because of a simple literacy tool being used in the home could become reality—but evidence for such use is needed. Since reading achievement is so highly correlated to other subject areas, this tool may help students with all kinds of needs and increase their overall school achievement (Allington & McGill-Franzen, 2013).

Professional Practice Significance

Educators may be able to communicate this as a cost free supplementary literacy tool for parents/families to use in their homes to increase their children's literacy. So many times teachers are doing all they can to help their students succeed in the classroom, but when their students leave for the summer there is little they can do to promote in-home literacy activities so that children continue to practice reading. Usually, summer school is encouraged, book lists are distributed, book fairs are held, but being able to give this information to parents as well, might be a huge help (Cahill et al., 2013). The idea is to determine the extent to which print everywhere will positively impact children's reading skills—even print on TV. Educators also could begin to integrate closed captioning and same-language subtitling into their instruction when using visual media such as movies, short clips, etc. Teachers who teach other languages have been

doing this for over 30 years and found success in their students acquiring a second language (Chang, 2003; Chen, 2012; Guillory, 1995; Hayati & Mohmedi, 2011; Huang & Eskey, 1999; Spanos & Smith, 1990; Vanderplank, 2010; Van Lommel, Laenen & d'Ydewalle, 2006; Zarei & Rashvand, 2011). Now that educators are integrating technology even more into their teaching, by adding this tool they could possibly increase their students' reading achievement while teaching them new content as found in many recent studies (Goldman & Goldman, 1988; Koskinen, Wilson, Gambrell, & Neumenn, 1993; Linebarger, 2001; Linebarger et al., 2004; Linebarger & Piotrowski, 2009; Linebarger et al., 2010; Neuman & Koskinen, 1992, Strassman, MacDonald, &Wanko, 2010). Any time there is any kind of video shown, words can be present on the screen so children are also reading the content.

For purposes for teaching another language to native English speakers, for example in dual and bilingual immersion programs in schools, it may be a helpful tool to have the closed captioning and subtitling in that language to increase reading achievement. Teachers of other languages could also encourage this practice at home. For instance, if a child is in a bilingual Spanish immersion program and the family speaks English at home, possibly the closed captioning and same-language subtitling is put on in Spanish at home to help reinforce the language being learned at school.

The information from this study may also lend itself to non-profit agencies and public agencies working with children and families specifically in the area of literacy. Non-profits such as PlanetRead that are using same-language subtitling currently with Bollywood films to increase literacy in India, may find this helpful as they expand their reach worldwide. Other non-profits like First Book that have a mission to end illiteracy in

the United States and now globally by providing new books to children living below the poverty line, may want to use closed captioning and same-language subtitling as an additional literacy tool to meet their goals. This study will provide additional evidence to determine the confidence one can have in using this approach.

Decision Making or Policy Development Significance

Cable companies that want to attract families/parents may look at these findings as a marketing tool as well as a literacy tool. By adding words to their regular programming automatically, known as open captioning (and not having parents to have to figure out the access to closed captioning), programs may attract a larger audience of viewers to their channels. They also may attract those from the Deaf community or those who have hearing impairments, thus increasing their audience and profits.

Streaming companies as well that want to build their audience may want to look into offering *open captioning*, where words automatically appear on the screen. In 2012, The National Association of the Deaf filed a suit seeking to force Netflix (Wall St. Cheat Sheet, 2014) to add closed captioning to videos on its "Watch instantly" streaming website. Under *Americans with Disabilities Act* rules, a "place of public accommodation" must meet certain requirements for access and use by the disabled. Even though Netflix now promises to have all shows accessible with the use of closed captioning by 2014, there are still improvements to be made. Currently if a parent or child tries to access closed captioning on their "Just for Kids" area, it is impossible. These changes could be made if it is found that words on screen help children learn to read.

Internet companies also may follow suit. According to the ADA Section 508 (2012), all online sites should provide closed captioning. However, if one attempts to

click on the CC button in the lower right hand window of a YouTube video or other video clip offered online, closed captioning rarely is accurate. If online sites felt the pressure by their audience to only use sites with accurate closed captioning, this could change these companies' practices and once again lead to more accessibility to the Deaf community and those with hearing impairments. The world of entertainment and cinema may want to follow the open captioning or same language subtitling idea, too. If taking your child to a movie turned into a literacy experience, more parents may attend more frequently, thereby adding to profits. Most recently, Disney has begun offering movies such as Frozen as "Sing-Alongs" in which same-language subtitling is being used on the screen during the songs in the movie. The popular "Frozen Sing-Along" has been topping the charts at the box office all over the nation (Cunningham, 2014). Imagine what a read-along may produce in profits.

Currently, there are only some theaters that try to accommodate the Deaf community and those with hearing impairments by providing glasses or other devices that allow for closed captioning. However, many of these devices are difficult to use and there is a limited supply. Many theaters offer no accommodation. However, with increasing findings that closed captioning may boost reading achievement in youth, possibly more theaters will use open captioning and words will appear on screens always in the movie theater, leading to equitable access for the Deaf community and those with hearing impairments, all while increasing the reading achievement of all children.

In the United States, the *American Disability Act* (ADA) states there should be equal accessibility for all, yet the Deaf community and those who have hearing impairments live in a world with many screens, yet no print on these screens. If the U.S.

government reinforced current policy regarding the ADA and/or fined cable companies and streaming/internet companies if they did not provide open captioning, we may finally be able to give equal rights to the Deaf community and those with hearing impairments. In doing so, possibly we create a country of readers at the same time. Additional data are needed regarding impact to determine if closed captioning truly can assist toward such access.

This country of readers may change the whole outlook of the United States and the public corrections and justice system. Since 66% of adults in our public prisons today are illiterate, imagine if the use of closed captioning and same-language subtitling began there and prisoners were learning how to read when they were watching TV (Trelease, 2013). There has actually been a study done in a correctional facility by Koskinen and Knable (1995). One group of inmates watched science videos with captions, while the other group watched science videos without. The group that watched with captions yielded significant differences on the word-meaning test favoring the captioned television condition. In addition, the questionnaire data indicated that the participants responded very positively to the science videos and to the use of captions with science material (Koskinen & Knable, 1995). If the goal of imprisonment truly is to rehabilitate, then those who served their sentence may leave the facility knowing how to read, with more education, and with another opportunity.

Summary of Significance

There are many countries that already are using closed captioning and subtitling as a supplementary literacy tool in the home, including two countries that can be said to be at opposite ends of the literacy achievement spectrum, Finland and India. Additional

data are needed to determine the scope and effectiveness of such practices. The purpose of this study is to add to this body of knowledge that may be useful for wise decision making regarding closed-captioning applications.

Definition of Terms

Same-language subtitling (SLS). SLS refers to the idea of subtitling motion media programs in the same language and script associated with the audio track (Kothari, Pandey, & Chudgar, 2005). Words on the screen match the audio narrative exactly in the "same" language as the audio.

Closed captioning (CC). Closed captioning is the most common form of subtitling in North America and was originally developed to improve access to television and video programming for the Deaf and those with hearing impairments. Words on the screen can but often do not match the audio narrative exactly, nor are necessarily in the "same" language as the audio. For example, CC of English audio can be in Spanish, English or any language understood by the Deaf community. Commonly, non-verbal sounds are also expressed as on-screen text, e.g., "Knock-Knock" or "Scream!"

Open captioning (OC). Open captions means captions are part of the video and cannot be turned off. They are always viewable to all viewers (Linebarger et al., 2010).

English language learner (ELL). English language learners (ELLs) are students who are unable to communicate fluently or learn effectively in English, who often come from non-English-speaking homes and backgrounds, and who typically require specialized or modified instruction in both the English language and in their academic courses (Glossary of Education Reform, 2013).

At-risk students. Students who are not at target or grade level regarding academic achievement are considered at-risk (Good et al., 2002).

Hearing impairment. Hearing impairment is defined by the *Individuals with Disabilities Education Improvement Act* (IDEIA, 2004) as "an impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational performance" (34 C.F.R. 300.7[c][5]).

Deafness. Deafness is defined by IDEIA (2004) as "a hearing impairment that is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification" (34 C.F.R. 300.7[c][3]).

Oral reading fluency (ORF). The measure of the ability to effortlessly translate letters to sounds and sounds to words accurately. The fluent reader is one whose decoding processes are automatic, requiring no conscious attention. Such capacity then enables readers to allocate their attention to the comprehension and meaning of the text (Good et al., 2002).

Summer slide. The summer slide can be called the summer slump or summer setback. It often refers to the loss of learning and skills due to the lack of educational opportunities that occur over the summer months when children are out of school (Cahill et al., 2013).

On-screen print. This refers to print placed on screen as part of a curriculum strategy for educational television (e.g., *Between the Lions*); it takes the form of captions and subtitling (Linebarger et al., 2009).

Title 1. Title 1 provides federal funding to schools that have low poverty levels. The funding is meant to help students who are at risk of falling behind academically. The

funding provides supplemental instruction for students who economically disadvantaged or at risk for failing to meet state standards.

Limitations and Delimitations

Limitations

Several limitations must be considered when interpreting the results of this study. First, the small sample size makes it difficult to generalize. However, because these children who attend a Title 1 school are typically at risk for delays in literacy skills, the findings may contribute to the body of research that supports closed captioning as a supplementary literacy tool (Adler, 1985; Koskinen et al., 1986; Linebarger, 2001; Linebarger, et al., 2004; Linebarger et al., 2010; Neuman & Koskinen, 1992; Parks, 1994). Another limitation was having the parents report home reading habits and television viewing of the child on a post survey rather than documenting and reporting daily throughout the summer, which could result in inaccuracy, social desirability, and self-reporting bias. However, since this is a quasi-experimental study, all participants involved in both the treatment and control groups are being administered the same survey. The third limitation is the DIBELS instrument, which only measures the oral reading fluency, not comprehension, vocabulary, sight words, phonemic awareness, alphabetic principle, etc.—which are all part of reading achievement. However, this is the only classroom assessment used at school and in the district at this point in time to assess reading achievement. The parents also gave the school permission to provide the researcher with the actual DIBELS results instead of self-reporting; this created conditions for more reliable reporting. The other limitation is that it is a quantitative

study and there have been many quantitative studies conducted on this topic, however none of these have been taken place in the home environment.

Delimitations

Many boundaries had to be drawn in this study. According to the American Academy of Pediatrics (2014), today's children are spending an average of 7 hours a day on entertainment media, including televisions, computers, phones, and other electronic devices. However, for purposes of this study the focus was primarily on regular educational television and movies by DVD viewed on the TV. Due to the difficulty of accessing closed captioning and same-language subtitling on the other devices this boundary had to be drawn. Also, by using just these devices, this study replicates past research studies where television is used to show increase in children's reading achievement in school settings. With the many different television media centers and cable companies within each family home, it was already a difficult study to administer and quite possibly the reason it previously has not been pursued in the home. If families were unable to access closed captioning and same-language subtitling on their television and other technological devices, then obviously the child in the treatment group would not be using this as a literacy tool in the home and the data will not be valid. Precautions were taken by researching all the cable companies and streaming devices offered in the community, creating a slide set, and presenting this information at the mandatory information meeting. A handout of that information was also given to the families on how to enable closed captioning as well as local cable company numbers to contact if assistance is needed. There also was a helpline available to support the parents if problems arise regarding the equipment involved.

Even though the researcher is an educational consultant in the area and could have used an advertisement in the paper and the snowball method to recruit the sample, the researcher thought that the encouragement from the classroom teacher to join a summer reading study would help gain a more diverse sample. The researcher had relationships with a school district that has a high to middle socioeconomic status overall. The few schools that were eligible for Title 1 funds due to their percentage of students who receive free and reduced lunch were still both pretty low percentages. Because of this, the volunteer sample represented more of a range of socioeconomic levels, rather than really low socioeconomic status. The Title 1 status of the school was important, as the hope was to include families of lower economic means, since students who receive free and reduced lunch and live in poverty conditions are the ones that often regress the most (Allington & McGill-Franzen, 2013).

First grade families were recruited from two different schools to avoid the control group hearing about the intervention and trying it themselves. The researcher only chose families of first graders because the oral reading fluency test was the only consistent test given in spring and then again in fall in this school district. For example, kindergartners in spring in this district do not take the oral fluency test nor do the second graders take the oral fluency test again in the fall. Beginning in third grade and beyond, the state reading assessment is given, not the DIBELS oral reading fluency measure. Although, the researcher wanted additional assessments, because the teachers were the ones assessing, no additional areas of reading such as sight words, vocabulary, comprehension, or phonics were assessed during these spring and fall times in this school district. However, since oral reading fluency scores gives a good indication of reading achievement, this is

still a strong indicator upon which to build this study (Allington, 1983). The DIBELS oral fluency test is a valid and reliable measure given all over our nation (Good & Kaminski, 2012).

By using a causal comparative design in this study, children were compared from two schools very similar in demographics. Both the control group and the treatment group should experience maturation at about the same rate, thereby mitigating this particular threat.

Summary

Using closed captioning on television in the home for young readers may be an effective supplementary literacy tool to prevent the summer slide. No matter the language background, after viewing television over the summer months with closed captioning, children may increase oral reading fluency and may show an increase in reading achievement. This could mean that by children simply reading the words on the screen each time they sit down to watch television, this transfers to their schoolwork and creates better readers. Since 99% of homes have a television, there is hope that 99% of our children can become better readers by using closed captioning and same-language subtitling as a supplementary literacy tool in the home. This study aims to provide data toward confirming the effectiveness of closed captioning as a literacy learning tool for children during the summer.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

This review of literature examines the effectiveness of using same-language subtitling (SLS) and closed captioning (a form of SLS) to increase reading achievement. First created for the Deaf Community, closed captioning helped Deaf people gain information from television (Boyd & Vader, 1972). For more than 30 years, this tool of closed captioning has also been used as a tool to teach a second language (Chang, 2003; Chen, 2012; Guillory, 1995; Hayati & Mohmedi, 2011; Huang & Eskey, 1999; Spanos & Smith, 1990; Van Lommel et al., 2006; Vanderplank, 2010; Zarei & Rashvand, 2011). Knowing that young people learn differently, need different tools, and have different motivations to learn, closed captioning also has been used with youth in the classroom and in after-school settings to increase reading achievement (Goldman & Goldman, 1988; Koskinen, Wilson, Gambrell, & Neumenn, 1993; Linebarger, 2001; Linebarger et al., 2004; Linebarger & Piotrowski, 2009; Linebarger, Piotrowski, & Greenwood, 2010; Neuman & Koskinen, 1992; Strassman, MacDonald, & Wanko, 2010).

Reviewing the evidence on the impact of close captioning and subtitling is important because it may assist the education community along with many families from many different backgrounds, speaking many different languages, with a literacy tool in a place where children watch the most television, the home. Such intervention, if effective, may empower parents to use this simple, no-cost feature, to increase the reading achievement of their children.

This review of the literature summarizes findings on the use of close captioning and/or subtitling as an effective literacy tool to increase reading achievement. The studies reviewed in this chapter took place in different geographical areas of the United States and in countries such as China, Spain, Italy, Demark, and India. The studies also considered a variety of factors relevant to closed captioning and same-language subtitling and are organized by these main headings: (a) learning to read, (b) the role of television, (c) same-language subtitling, and (d) close captioning. Within each of these main sections, research methods of the studies are summarized, definitions of significant terms are reviewed, results are summarized, overall strengths and limitations of the studies are described, and the conclusions and implications of these studies are provided.

Learning to Read

There is a powerful connection of access to print with high reading scores among children (Duke, 2000; Krashen, McQuillan, & Allington, 2013; Neuman & Celano, 2001). It is difficult to get good at reading if there is no print to read at home. It is also difficult to get interested in reading without print in the home. A study done with kindergartners compared one group with high interest in print and the other with low interest. The high-interested group had an average of 80.6 books in their homes while the low-interest group had an average of 31.7 books in their homes (Trelease, 2013). A child who is raised in a home containing at least 500 books is 36% more likely to graduate from high school and 19% more likely to graduate from college than an otherwise similar child raised in a home containing few or no books (Evans et al., 2010).

Although there is much debate on the best way to teach children how to read, what most experts agree upon, and the past 30 years of reading research confirms, is that

regardless of gender, race, or socioeconomic background, students who read the most also read the best, achieve the most, and stay in school the longest (Trelease, 2013). One in six children who are not reading proficiently in third grade do not go on to graduate from high school on time, a rate four times greater than for proficient readers (Hernandez, 2011).

There are many factors that help children increase their skills in reading. These factors include text at their level, interest in the subject matter, a child being read aloud to at home, the time the child spends reading, visits to the library, print climate (usually meaning access to books and other texts) in the home, and motivation (Allington, 1983; Allington & McGill- Franzen, 2013; Cahill et al., 2013).

Oral Reading Fluency

Another agreed-upon fact in the world of teaching reading is that the goal of reading is to make meaning (Trelease, 2013). If a child is just saying the words and not understanding or comprehending what he or she is reading, then it is not really reading. Oral reading fluency plays an integral role in this comprehension piece (Allington, 1983; Rasinski, 2004). Oral reading fluency (ORF) measures the rate a child reads words per minute. If children read too fast, they may not grasp the meaning. If children read too slowly, they may not understand. Accuracy is also important. If children are saying the wrong words, omitting words, or adding words when they are reading they may change the meaning of what they are reading or not understand it all together. Rate and accuracy are crucial in successful reading (Rasinski, 2004).

Many studies have shown that children who are fluent readers have higher comprehension, and students who have high comprehension show high achievement in

reading. Since reading is the main core subject in all other subject areas in school, good readers are higher achievers and, conversely, students who struggle in reading often are those who achieve lowest in school (Allington, 1983; Rasinski, 2004).

DIBELS. The National Reading Panel (2000) report suggested the core components of early reading are in three areas (a) phonemic awareness, (b) alphabetic principle, and (c) accuracy and fluency with connected text. Phonemic awareness and alphabetic principle are assessed on the DIBELS in kindergarten and the fall and winter of first grade. Beginning in the winter of first grade, Good and Kaminski (2002), creators and researchers of the DIBELS, suggest children should be well on their way to becoming fluent readers by first grade. DIBELS oral reading fluency (ORF) is intended for most children from mid-first grade through third grade. It is assessed three times a year. This tool is a valid and reliable tool especially if administered by the same educator. It requires little time and materials and has shown to predict and correlate with later success among thousands of students across the United States (Elliott, Wee, & Tollefson, 2001).

Benchmark goals for end-of-spring first grade ORF scores and beginning-of-fall second-grade ORF scores appear in Table 1. If a student scores 0-24 words per minute (wpm) read correctly on the DIBELS oral fluency measure at the end of the year in first grade, they are considered "at risk." If students score 25-39 wpm correctly in the spring they are considered to have "some risk" and if they score 40 and above they are considered to be "low risk" according to the University of Oregon Center for Teaching and Learning (2014). For the beginning of second grade, students who score 0-24 wpm on the oral fluency measure are considered "at risk," students who score 25-35 are

considered "some risk," and students who score 35 and above are "low risk." Students who score "at risk" are encouraged to receive extra reading support (Good & Kaminski, 2002).

Table 1

Benchmark Goals for DIBELS Oral Reading Fluency

Classification	First grade[a]	Second grade[b]
At risk	0-19	0-25
Some risk	20-39	26-43
Low risk	40-above	44-above

Note. From Good and Kaminski (2002).
[a]End of Year scores. [b]Beginning of Year scores.

The "Summer Slide"

Summer reading loss accounts for roughly 80% of the rich-poor achievement gap (Allington & McGill-Franzen, 2013). Stephen Krashen, professor emeritus, University of Southern California, says, "The solution to the problem of the achievement gap in literacy development is right here: simple, obvious, and supported by massive evidence" (Allington & McGill-Franzen, 2013, back cover).

All young people experience learning losses when they do not engage in educational activities during the summer (Cahill et al., 2013). Research spanning 40 years shows that students typically score lower on standardized tests at the end of summer vacation than they do on the same tests at the beginning of the summer, which essentially is at the end of the academic school year just prior to summer vacation (Cooper et al.,

1996; Downey et al., 2004; Entwisle & Alexander 1992; Heyns, 1978). More than half of the achievement gap between lower- and higher-income youth can be explained by unequal access to summer learning opportunities. Students from lower socioeconomic status lose 2 months of reading achievement over the summer months while those from more advantage homes gain a month during summer (Cooper et al., 1996). Low-income youth are therefore, less likely to graduate from high school or enter college (Alexander et al., 2007).

Summer reading loss is becoming a huge problem. Some say if the current cycle is not broken, a loss of 3 months each summer accumulates to a gap of almost 2 years by the end of the sixth grade (Allington & McGill-Franzen, 2013). P. David Pearson, Professor at University of California, Berkeley and contributing author to the Common Core National Standards, suggests:

> Summer Reading shows us how to make voluntary reading programs work, especially for low achievers. This could be the foundation of a reform movement that stands chance of closing the achievement gap between rich and poor that haunts American schools. (Allington & McGill-Franzen, 2013, back cover)

However, communities must put forth this effort together because so far the programs that are effective in increasing summer reading achievement and preventing the summer slide in children require substantial funding. The most effective summer programs include summer reading programs, bookmobiles, and free book fairs (Cahill et al., 2013).

Educators are being pressured to solve this problem of the summer slide. Examples of principals like Lynn Bigelman are promising; she wrote a grant 4 years ago to try and prevent the summer slide in her school district to give books to kids during the

summer months (Allington & McGill-Franzen, 2013). Her school district had a goal to put 20 or more books in the hands of exiting first graders. Every year since 2009 they have achieved this and the district has tracked results. In fact, in 2008, 80% of the students maintained their reading growth. In 2010, an interesting finding was that even their students in special education, including students with learning disabilities, cognitive, and emotional impairments, as well as students on the autism spectrum maintained and even increased their reading levels throughout the summer (Allington & McGill-Franzen, 2013). This principal and school district understood the importance of putting high-interest and correctly leveled books in the hands of children. Their first step was to administer an interest survey to 832 first-grade students at their 13 elementary schools. The results of the survey provided the district with information on what types of books to order for their students to take home over the study. Interestingly, the study results concluded that first grade readers were most interested in sports, animals/dinosaurs, and cartoon/TV (Allington & McGill-Franzen, 2013).

The Role of Television

Television as Babysitter

Children under the age of 6 watch an average of 2 hours of television each day (Moses, 2008). The average child spends 7 hours a day with media and 3 to 4 hours of that time is watching TV a day (US Department of Commerce, US Census Bureau, 2013). The other part includes video games and other forms of screen time. Reports indicate that 71% of children by age 8 not only lived in a home with three televisions but also had a TV in their bedroom, which added an additional hour of viewing (Trelease, 2013). According to much research, this rate of TV viewing increases as a child grows

and excessive TV viewing throughout childhood can have a negative affect on education achievement (Trelease, 2013).

TV can have many harmful effects on a child's life. There is much research to support claims that excessive TV watching decreases physical activity, develops unhealthy eating habits, lowers school performance, causes sleep deprivation, adds to the risk of attention deficit hyperactivity disorder (ADHD), and may increases aggressive behavior in children (Borzekowski & Robinson, 2005; Christakis et al., 2004; Fitzpatrick et al., 2012; Owens et al., 1999; Pagani, 2011). Findings also suggest that more than half of families eat dinner with the TV on. It is also suggested that background noise from TV may prevent healthy conversation, increase poor eating habits, and interrupt play in children (Schmidt, Pempek, Kirkorian, Lund, & Anderson, 2008). Researchers in a study done with children ages 1, 2, and 3 said that even though the children weren't interested in the show, background TV is an ever-changing audiovisual distractor (Schmidt et al., 2008) that disrupts their ability to sustain various types of play. The finding is important because many well-meaning parents who would not let their young children watch television may not realize that even adult programs that do not interest children still can have an effect (Schmidt et al., 2008). Another study found that children who viewed television before school had a harder time focusing at school (Trelease, 2013). Research has also shown that children who view more than 10 hours of TV a week often have lower school achievement scores (Trelease, 2013).

The American Academy of Pediatrics (AAP, 2014) recommends no TV before the age of 3 and recommends that parents limit their children older than 3, to 1 or 2 hours a day. It also suggests that parents watch TV as much as they can with their child. Content

and dosage is what doctors really are concerned about in children's TV time. Studies show that children who have a TV in their bedroom often end up watching an hour more and have lower school achievement (Trelease, 2013). The television viewing habits of parents and siblings influence a child's TV viewing habits more than any other factor (Yalcin et al., 2002). These findings suggest content and dosage matter. Television can be harmful to children and these habits begin in the home.

Television as Teacher

However, there is also much research to support the idea that TV may have educational benefits as well (Linebarger et al., 2010). In many homes across our country, the TV is a well-loved object. Over 92% of homes in the United States own a DVD player and 99% of these homes also have one or more televisions (U.S. Department of Commerce, U.S. Census Bureau, 2012). Decades of research support the idea that when the goal of the program is to teach, educational television can support a child's academic and pro-social development (Fisch & Truglio, 2001; Singer & Singer, 2001).

Educational programming such as *Between the Lions*, *Sesame Street*, and *SUPER WHY!* are a few television programs that focus on teaching early literacy skills and have research to support the claim that TV can indeed teach. *Between the Lions* is a program designed to teach concepts of print, the alphabetic principle, phonemic awareness, and letter-sound correspondences. A study was administered to 79 children in kindergarten and 85 children in first grade. The experimental group of children watched 17 episodes in their classroom, over a period of time from February to April, while the control group did their usual routine in the classroom. These episodes of *Between the Lions* focused on both holistic processes (e.g., understanding different reading and writing contexts, prior

knowledge, and motivation) and direct instruction comprising visual and auditory stimuli (e.g., print on screen with changing initial or final consonants). Both types of experiences are essential to emergent literacy and, later, fluent reading (Whitehurst & Lonigan, 1998). Both groups were pre-assessed and post-assessed using the DIBELS measure in the areas of letter naming, phoneme segmentation, and nonsense word fluency (Good et al., 2002). The experimental groups who watched *Between the Lions* increased their literacy skills in all areas (Linebarger, Greenwood, Kosanic, & Doku, 2004). Children in the at-risk group (both kindergarten and first grade) did demonstrate significant gains over their non-viewing counterparts on some early literacy skills, however not all (Linebarger et al., 2004).

Traveling lens theory. The traveling lens theory suggests that if print is too difficult or too easy, the reader will ignore it; however, when content is of interest and cognitively challenging, the reader will adhere to it (Linebarger et al., 2004). With the captivating visuals alongside the print, it suggests that repeated exposure to the program will eventually bring the content into the child's interest and ability level. Because television is a preferred activity and young children enjoy watching programs repeatedly, the likelihood that they will view programs repeatedly is high, giving them the repetition necessary to help even the most at-risk child learn.

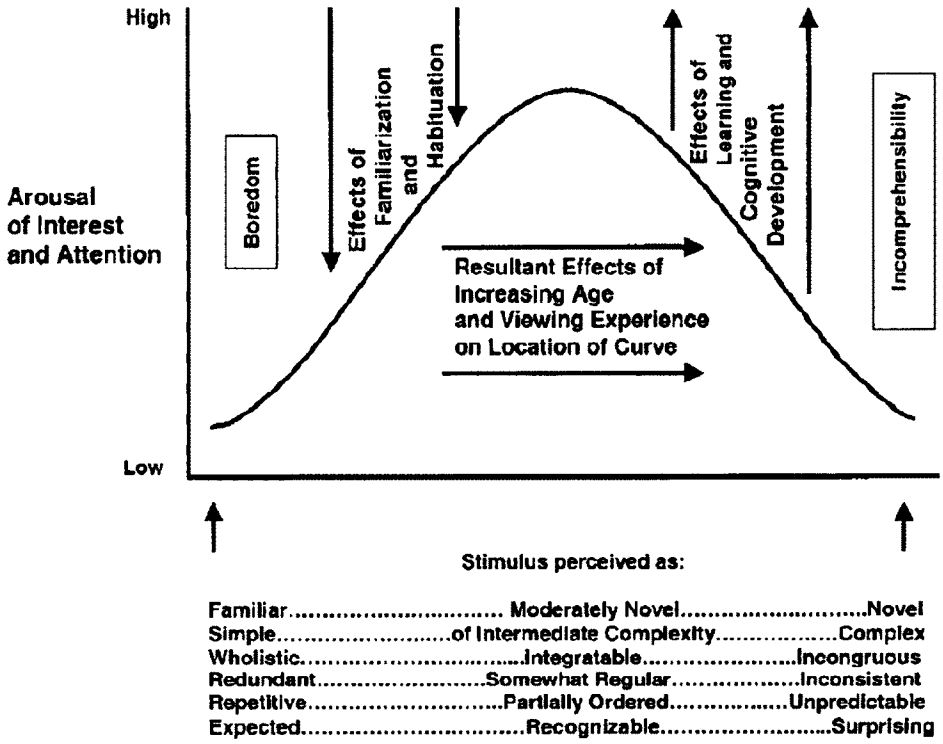

Figure 1. Traveling lens model. From "Effects of Viewing the Television Program Between the Lions on the Emergent Literacy Skills of Young Children," by D. L. Linebarger, A. Z. Kosanic, C. R. Greenwood, & N. S. Doku, 2004, *Journal of Educational Psychology, Volume 96, No.2,* p. 298. Copyright 2004 by American Psychological Association. Reprinted with permission.

Another follow-up study was done comparing the effects of *Between the Lions* and *Arthur* (a popular television show based on the character from author Marc Brown's children's books) with150 kindergarteners. These kindergarteners were non-native English speakers, also known as English language learners. Although, on average, the phonological awareness and letter-word identification knowledge of all the early bilinguals in the study increased at a fast pace during their kindergarten year, intervention effects were seen; children who viewed *Between the Lions* during class hours had steeper

trajectories on two of the three phonological awareness measures than those who viewed *Arthur* during class hours and those who did not view either show during class hours (Uchikoshi, 2006).

In another study, over 171 families and preschool children volunteered to watch the television show, *SUPER WHY!* The most prominent finding in this project was that preschool children who watched *SUPER WHY!* increased their reading skills. Across an 8-week period, the experimental group demonstrated significant growth on targeted early literacy skills featured in *SUPER WHY!* including indicators of language development, letter knowledge, phonological and phonemic awareness, print conventions, and a combined early literacy skills task (Linebarger, McMenamin, & Wainwright, 2009). Also, the long-running and widely viewed children's television show *Sesame Street* has over 30 years of research to support findings that show children can learn from television (Fisch, Turglio, & Cole, 1999; Minton, 1975).

Taken as a whole, these results are promising, suggesting that print via television can lead to positive changes or growth in key early literacy skills predictive of later fluent reading. Given that television is available in nearly all parts of the world and closed captioning is readily available on nearly all televisions—and therefore might be considered "free technology"—some believe that it may have enormous potential to reach all children. Findings suggest that having children view programs like *Sesame Street*, *SUPER WHY!,* and *Between the Lions* could help a significant portion of students by reinforcing, motivating, and extending early literacy instruction, both in the classroom and within the child's home (Fisch, Turglio, & Cole, 1999; Linebarger, Greenwood, Kosanic, & Doku, 2004; Linebarger, McMenamin, & Wainwright, 2009).

The strengths of these studies were the use of valid and reliable pre- and posttests and that the studies lasted over several weeks (i.e., length was more long-term). The findings corroborated others on this topic and confirmed the Traveling Lens Theory, adding to the body of research on the benefits of educational television to increase literacy skills in children. Limits to these studies include small sample sizes, which limits the ability to generalize findings. Also, the studies took place in small geographic areas like the Pacific Northwest, Kansas City metropolitan area, and Midwest areas of the United States. These areas do not reflect all of the diverse groups in the United States. All studies were performed in staged settings and preset classrooms, so therefore were unable to randomly assign participants to conditions due to the classroom arrangement. They did not take place in the home, the authentic environment where most television viewing takes place. These studies also did not account for other home reading factors that could affect a child's literacy growth over time, including the time others spend reading aloud to a child, the number of books in the home, and the time spent reading independently.

Same-Language Subtitling

Used around the world, subtitling on television is a tool that increases language learning and reading achievement (Davey & Parkhill, 2012; d'Ydewalle, Praet, Verfaillie & Van Rensbergen, 1991; Ghorbani, 2011; Harji, Woods & Alavi, 2010; Holmes, Russell, & Movitz, 2007; Kothari, 2008; Kothari, Pandey & Chudgar, 2005; Kothari, Takeda, Joshi & Pandey, 2002; Koolstra, & Beentjes, 1999; Perego, Missier, Porta & Mosconi, 2010). Same-language subtitling (SLS) refers to the idea of subtitling motion media programs in the same language and script associated with the audio track (Kothari,

Pandey, & Chudgar, 2005). Simply put, the words on screen match the audio narration. The viewer is hearing and seeing the words at the same time.

Teaching a Country to Read

There are over 900 million illiterate people on the planet and a third of these are in India. In a country where reading material is scarce and the education system struggling, there is hope in a not-for-profit agency called PlanetRead. This organization is using same-language subtitling (SLS) and the love for Bollywood-style songs to teach a country to read. SLS is the first global effort of its kind that aims to make reading an inescapable part of 750 million people's TV viewing experience in India. Currently, SLS is helping transition an estimated 200 million so-called "literates," the main target audience, from weak alphabetic familiarity to being able to read newspapers. According to Brij Kothari (personal communication, January 13, 2014), who founded the non-profit PlanetRead.org, this organization is working hard to scale up SLS in India, and potentially other countries, on existing TV programming and bring reading to people in electronic and digital forms in desired languages. From 2006-2014, TV programs with SLS were shown weekly in Hindi (nationally), Bengali, Gujarati, Marathi, Telugu, Tamil, Kannada and Panjabi—and literacy skills are improving. Results from studies conducted on the effectiveness of same-language subtitling in Bollywood films basically indicate that those who viewed television using SLS (a) dramatically increased their reading skills over time (sometimes with only being exposed for 30 minutes a week), (b) increased the reading of other print (such as the newspaper), (c) made greater gains if they were learning to read in school and could practice their skills using SLS at home, and (d) enjoyed SLS as they liked to sing along with the words (Kothari et al., 2002; Kothari et

al., 2004; Kothari, 2008). Strengths with these studies were that they were longitudinal, some following participants for nearly 5 years (Kothari & Bandyopadhyay, 2014), had large sample sizes for generalizability, and employed quasi-experimental comparative designs.

Closed Captioning

Closed captioning is the most common form of subtitling in North America and was originally developed to improve access to television and video programming for people who are Deaf and those with hearing impairments. It is a text version of the spoken part of television (Kothari, Pandey, & Chudgar, 2005).

Trelease (2013), who has empowered parents and educators for the past 30 years to help children to become avid and lifelong readers by reading aloud to them, believes that part of the reason the country of Finland has one of the highest literacy rates in the world is because of their in-home reading tutor, also known as the closed-captioning button. Finnish children watch almost as much TV as American children, except they grow up "reading" TV. Almost half of all Finnish TV shows have closed captioning or subtitles in Finnish. This means that half of everything a child wants to watch is going to be in a foreign language. If children want to understand it, they will have to be able to read Finnish. Finnish children are motivated to learn to read the captioning so they can understand all the American shows, which they seem to do. Remember this is a country where formal reading instruction does not even begin until age 7, yet they achieve the highest reading scores in the world (Trelease, 2013). There may be many factors contributing to reading success, perhaps closed captioning is one. We do not fully know

because research has yet to be conducted in Finland on the effectiveness of closed captioning.

Eye Tracking

How do we know if a viewer is looking at the words and not just the pictures? Research done by d'Ydewalle et al. (1991) came up with a powerful finding by conducting eye-tracking studies. It was concluded that reading of on-screen subtitles is automatic for most and this automatic reading does not require prior experience or habit formation with subtitles. In their experiment, subtitles were shown in the same language as the audio. If the subtitles are there, they will be read and simultaneously processed by the child. More recently, Jensema (2000) used similar eye-tracking methods with deaf and hearing adults, essentially confirming d'Ydewalle's important conclusion. Research has shown that viewers naturally synchronize the auditory and textual information while watching a film song with SLS. When SLS is integrated into popular TV entertainment, reading happens automatically and subconsciously. Closed-captioning (a form of SLS) turns television engagement from a passive picture-viewing-only activity into a reading activity (Kothari, 2008).

Teaching Reading to People Who are Deaf

Although the closed captioning chip was once expensive ($250), since 1993, it now comes built into every television set sold in the United States (Trelease, 2013). It was created to help people who are Deaf and those with hearing impairments gain equitable access to television programming (Boyd & Vader, 1972). In the United States, closed captioning is generally written in English, yet the English-literacy rates among people who are deaf are low compared to hearing peers (Lewis & Jackson, 2001). The

use of captions involves reading as an essential skill for understanding the program. Moreover, children who are deaf or have a hearing impairment watch as much (or more) television than their hearing peers. Because of this, closed captioning has been explored as a teaching tool to help students who are deaf to learn to read (Cambra, Silvestre, & Leal, 2009; Lewis & Jackson, 2001; Schilperoord, de Groot & van Son, 2005; Ward et al., 2007).

Specifically, reading comprehension has been an area of focus in studies related to using closed captioning as a tool to teach people who are deaf how to read. In one study, 50 deaf students with a reading level from second to 11th grades were drawn from an urban public Midwestern state's residential school for the deaf program and hearing impaired. They were compared to 50 hearing students with comparable reading levels, drawn from a private parochial school and urban public school in the same city. The final comparison sample consisted of hearing students whose reading scores most closely matched the selected group of students. The student's score on the SAT was used as the standardized reading grade level. The study examined video comprehension for deaf and hearing participants under four conditions

1. A video with captions, no audio.
2. A video with captions shown twice in a row.
3. A captioned display, no picture, no audio.
4. A printed transcript of the captions.

After watching four mini-series 10-minute segments, participants took an 18-question criterion-referenced comprehension test. The research study found that for students who were deaf, the visual information in the scenes combined with the verbatim captioning

increased comprehension of regular, televised programs, however the hearing students still had higher scores possibly due to the background knowledge gained from hearing conversational English and background knowledge (Lewis & Jackson, 2001). Although this study is limited because of a small sample size and the fact that it was conducted in only one geographic region, educators in the Deaf community are now looking at how they can use television scripts to teach English grammar and syntax in order for deaf people to gain fuller comprehension of television programming (Lewis & Jackson, 2001).

Teaching a Second Language

Educators who teach a language have used closed captioning on television as a form of assisted technology in the classroom for many years to teach their students another language. Although little (if any) research exists on the impact of children watching television with closed captioning in the home environment in the United States, surprisingly, many people have used closed captioning as a language acquisition tool in their homes. In fact, tele-caption decoders were originally developed for the Deaf and those with hearing impairments and sold separately before 1993. An interesting finding performed by the National Captioning Institute in 1989 suggested that over half of the decoders were sold to the hearing population and that many of these purchasers were immigrant families. Now that all televisions have this captioning device, embedded in 99% of homes, nearly everyone can access this tool for learning a second language. Nine studies in this review discussed the great benefit of using closed captioning and subtitling to increase second language acquisition (Chang, 2003; Chen, 2012; Guillory, 1995; Hayati & Mohmedi, 2011; Huang & Eskey, 1999; Spanos & Smith, 1990; Vanderplank, 2010; Van Lommel et al., 2006; Zarei & Rashvand, 2011).

Many of these studies addressed the use of close captioning with bilingual students and focused on vocabulary. The results of these studies found that through captioned TV, bilingual students appeared to make significant gains in vocabulary knowledge without formal instruction. Visual representation of words in video form was thought to be an important contributor to student's word knowledge (Chang, 2003; Chen, 2012; Guillory, 1995; Hayati & Mohmedi, 2011; Huang & Eskey, 1999; Lommel, Laenen, & d'Ydewalle, 2006; Neuman & Koskinen, 1992; Spanos & Smith, 1990; Vanderplank, 2010; Zarei & Rashvand, 2011).

In one study by Neuman and Koskinen (1992), 129 bilingual seventh- and eighth-grade students were assigned to one of four groups: (a) captioned TV, (b) TV, (c) reading along and listening to text, or (d) textbook only (control). Treatment groups either viewed or read three units of science segments from *3-2-1 Contact* science series twice a week for 12 weeks. Pretests evaluated vocabulary and prior knowledge while posttests analyzed knowledge of 90 target words and a written retelling. Subjects in the closed-captioning group outscored others in word knowledge and recall of information. An analysis of factors suggested that they also yielded higher vocabulary gains. Subjects more proficient in English learned more words form contexts than others. This did follow the "richer get richer" maxim of the Mathew Effect, where the students who were most proficient in English at the outset of the study made more gains than the others from the same experience.

These results also suggest that comprehensible input might be a key ingredient in language acquisition and reading development, confirming Krashen's Theory. The low anxiety of learning through watching television also may have contributed to the

increased learning. This also may add to the benefit of using this as a tool in the home, an environment where children are less likely to be stressed by academic and language pressures, which sometimes are present in the classroom environment.

Krashen's theory of second language acquisition. Stephen Krashen is an expert in the field of linguistics, specializing in theories of language acquisition and development. Much of his recent research has involved the study of non-English and bilingual language acquisition.

Krashen's theory of second language acquisition consists of five main hypotheses. One of them specifically discusses the idea of comprehensible input. The idea is that basic competence in the second language (L2) is a function of the amount of comprehensible input acquirers receive and understand, as well as the degree to which they are provided with motivation to learn (Neuman & Koskinen, 1992). According to Krashen, some of the best methods are low-anxiety situations, containing messages that students really want to hear, also known as "comprehensible input." These methods allow students to talk and use the language where they are in life and not from forcing and correcting production often found in traditional teaching methods (Schutz, 2007).

Krashen (2009) also believes the methods to improving students' reading ability are quite clear. One of the most effective ways to improve reading ability is to provide readers with interesting and comprehensible books. In addition, more access to books will increase the interests of students in reading. Moreover, the utilization of sustained silent reading will also result in better reading (Krashen, 2009).

Teaching All Children to Read

In the studies discussed in this literature review, closed captioning was used in classroom or staged settings with youth as a literacy tool to increase reading achievement (Goldman & Goldman, 1988; Koskinen et al., 1993; Linebarger, 2001; Linebarger & Piotrowski, 2009; Linebarger et al., 2004; Linebarger et al., 2010; Neuman, & Koskinen, 1992; Strassman et al., 2010). In these research studies, closed captioning was tested among youth to discover if this could be a literacy tool to help increase students' reading achievement. These studies are of great importance because few studies exist on how the reading achievement of youth has been impacted by closed captioning.

Participants included in the studies were preschool to college age students. Many of the studies dealt specifically with youth, mainly belonging to low-income communities and high-risk schools in the United States. The sample size in all the studies ranged from 70 to 129, and included racially diverse individuals. The participants were from different parts of the United States, including the East Coast, Midwest, and South. Participants in these studies were mainly randomly selected.

Data were collected by varied measures that included documents, interviews, surveys, pretests and posttests, observations, and questionnaires. Many of these studies used the DIBELS assessment (Linebarger, 2001; Linebarger et al., 2004; Linebarger et al., 2010).

Three of the studies addressed specific areas of reading where the presence of close captioning increased achievement in areas of vocabulary, inferential comprehension, targeted comprehension, word recognition, semantic and syntactic knowledge, letter naming, and phoneme segmentation (Linebarger, 2001; Linebarger et

al., 2004, Linebarger et al., 2010). The only area that seemed to be unaffected by the intervention tool was the area of oral reading fluency. Most likely, a 2-week period for this certain study was not enough time to see gains in this area (Linebarger et al., 2010).

One study showed the beliefs about one's own competence in using and learning from a particular medium, such as the TV, influenced word recognition and oral reading rate outcomes (Linebarger, 2001). In this particular study, boys outperformed girls when both viewed captions. It was suggested that boys' oral reading rates were higher possibly because they believed themselves more competent at learning information from the TV. However in a later study, the gender of each participant showed no significance (Linebarger et al., 2010).

Dual coding theory. The Dual Coding Theory suggests that when duplicative information is simultaneously presented using two or more modalities (i.e., audio and visual content), the media stimuli help the viewer better understand the show. Research suggests it can actually enhance young children's understanding of program content by serving to increase the number of cognitive paths that can be followed to retrieve the information. This increases learning without overwhelming the learner (Linebarger et al., 2004; Linebarger et al., 2010; Neuman, 1995). However, if the information is dissimilar, then the child will usually choose one, use one over the other, or switch between the two. Studies suggest young children do not suffer comprehension decrements when content is presented both aurally and visually (Linebarger et al., 2010).

Summary of Research Results on Closed Captioning

In the studies reviewed, close captioning and subtitles were found to contribute to increased reading achievement with at-risk youth. A variety of studies showed that close

captioning and/or the use of subtitles (a) increased language acquisition and reading achievement in many areas, (b) increased the English language proficiency of those youth who viewed the closed caption, and (c) engaged and motivated youth which may have allowed for greater learning to take place.

There were strengths in these studies such as:

1. Studies corroborated other findings in previous research.
2. Experimental designs in some studies allowed random sampling and for generalizability.
3. Measures were predominantly valid and reliable.
4. Independent coders analyzed data.
5. Interrater reliability among coders was calculated and reported.
6. Multiple measures were used, especially documents, questionnaires, and tests.
7. Sound research methodology was used.
8. Findings confirmed three theories: Krashen's Theory of Language Acquisition, and the Traveling Lens Theory and disconfirmed the Dual Coding Theory.
11. Measures aligned with the types of research questions that guided the studies.
12. Samples were diverse in size, demographics, and locations, which enables greater generalizability.
13. Results added new information to the topic of reading and further developed this field of knowledge.
14. Studies included participants across unstudied populations.

The limitations of the research studies on using closed captioning in this review, conducted in the United States or Europe, included the following:

1. No studies were done in a real-life context like the home environment.
2. There have been no long-term studies lasting more than 12 weeks.
3. Close captioning was tailored to a slower speed and level for a beginner reader in all cases except one (Linebarger et al., 2010).
4. There have been few studies done with middle- to high-income families/children.
5. There have been no studies done in the Pacific Northwest region of the United States.

Summary

Secondary and primary sources were used in this literature review to discover if closed captioning and same-language subtitling could be used as a supplementary literacy tool in the home to increase reading achievement over the summer months and prevent the summer slide. Several secondary resources were included in this review of the literature, all well-known in the area of literacy (Allington & McGill-Franzen, 2013; Cahill, Horvath, McGill-Franzen, & Allington, 2013; Moses, 2008; Trelease, 2013). Primary sources also were included in this literature review, which tended to be experimental, comparative, and causal-experimental studies. Most of the studies reviewed were published between 1996 and 2013. The questions asked were: (a) Can closed captioning or subtitling on television be used in the classroom or in a staged setting as a literacy tool to increase reading achievement? (b) Does having words on the screen, whether closed captions, subtitles, or an educational program where stories are read, increase student reading achievement? (c) Is this an effective literacy tool with children, including English language learners or bilingual students?

Theories

In this review of literature three theories were examined: (a) The Traveling Lens Theory, (b) Krashen's Theory of Second Language Acquisition, and (c) the Dual Coding Theory. Data basically confirm the Traveling Lens theory that suggests children can process from one medium (like TV) to another medium (like books). Data also basically confirm Krashen's Theory of Second Language Acquisition, which poses that comprehensible input produces low-anxiety situations where motivation is high. Finally, data basically disconfirm the Dual Coding Theory, which posits that more than two modalities (auditory, visual, print on screen) would be overwhelming for the viewer.

Conclusions/Implications

The results of the studies summarized in this review of literature indicate that using close captioning and subtitling is a useful tool to increase the reading achievement and language acquisition among all ages and with various language backgrounds. It also provides an opportunity for all ages to actively engage in watching television which people enjoy, all while improving language and reading skills. Future studies should include larger sample sizes. Most importantly, studies on closed captioning must be done in real-life contexts like the home. Closed captioning has great potential to be used as a supplementary literacy tool in the home to help families create a print-rich environment and help children gain access to print, especially in the summer months when many children lack resources to practice their reading.

These studies are crucial to support closed captioning and subtitling as a supplementary literacy tool to increase children's reading achievement and to the greater goal of social justice in the field of education and specifically family literacy. If there is a

simple, familiar, and free tool already in our homes that can empower parents to help their children increase their early literacy skills, then we must make use of this literacy tool to raise readers and in doing so build a fully literate society. This dissertation study was conducted to add to the knowledge base useful for making wise decisions that indeed will support successful learning.

CHAPTER 3

METHODOLOGY

Introduction

Using closed-captioning, same-language subtitling on television in the home during the summer months may increase reading achievement in the area of oral reading fluency. By children simply reading the words on television during the summer vacation, they may become more fluent readers and therefore higher achievers. Since 99% of homes have at least one television in the United States, there is hope that 99% of our children can become better readers. By using closed-captioning, same-language subtitling as a supplementary literacy tool in the home during the summer months, children—especially those from low-income households who typically regress 2 months in reading achievement over the summer—may increase their achievement and prevent this summer slump (Cooper et al., 1996).

Methods

Design

A comparative quasi-experimental design was used to examine the extent to which closed captioning and same-language subtitling during summer vacation months (a) affects the oral reading fluency of first graders (7-year-old children) who attended two eligible Title 1 elementary schools during the academic year and (b) prevents a decrease in reading achievement known as the "summer slide" in those participating children? Parents of first graders who attended one Title 1 eligible school were in the treatment group, while parents of first graders from another Title 1 eligible school with similar demographics in the same district participated in the control group. The parents of the

children in the treatment group enabled regular television programming per parent discretion with closed captioning and same-language subtitling on movies throughout the summer months. The parents of the children in the control group did not use closed captioning and same-language subtitling when watching regular televisions programming per parent discretion during the summer months. A pretest-posttest comparative quasi-experimental design was used to compare the two groups. Oral reading fluency was measured as a regular part of school/district practice with DIBELS at the end of the first grade (spring test scores) and the beginning of the second grade (fall test scores) for both groups and copies of these reports were given to the researcher by the school principals.

Sample

Participants were parents of first graders (7 year olds) who attended two schools eligible for Title 1 funding in a suburban school district near Seattle, Washington. The consent from these parents who volunteered for this study was obtained to gather the data from their child's DIBELS end-of-the-year first grade oral fluency reading scores and beginning-of-the-year second grade oral fluency scores. This study took place in the home environment over the summer months. This was a voluntary sample, however schools receiving Title 1 funds with similar demographics within the same school district were purposively sought, and parents were invited/volunteered from the two schools identified. Parents were recruited for this study with the help of the first grade classroom teachers and the principals at the two Title 1 eligible schools. Parents/guardians volunteered to report their child's home reading habits and home viewing television behaviors along with other demographic information in a parent survey.

Intervention Variable

The intervention variable in this study was students who watch closed captioning and same-language subtitling during regular children's programming and movies versus those who watched regular children's programming with no closed captioning and same-language subtitling. Another variable to be analyzed was language background because this is an important factor not only in learning to read, but also in previous studies about closed captioning. Since many children who are English language learners (ELL) tend to struggle with learning to read English, the research may shed light on whether closed captioning was an effective tool to be used in the homes of these children as well, to increase reading achievement. Other variables that may affect reading achievement over the summer were how much the child was read aloud to over the summer, how much the child read independently, how many books are in the home, and how much the child watched television. A demographic survey given to the parents/guardians at the end of the study included questions on these variables.

For the children in the intervention condition, the on-screen closed captions were the original captions created for each television shown by professional captioning services using guidelines established by the Media Access Group/WGBH and the Federal Communication Commission (1999). These guidelines resulted in near-verbatim captioning with a maximum presentation rate of 120-130 wpm (words per minute). They are considered near-verbatim because captions for children's programs are not verbatim: rather they are edited typically for beginning and easy readers. Because of these edits, captions match the spoken narration or dialogue about 84% of the time (Linebarger et al., 2010). The original captions will purposely be used since they are provided on children's

programming and the study is occurring in the home environment, instead of the carefully research-derived captions where the speed of the captions was slowed down, as was the case in many prior studies (e.g., Linebarger, 2001). Parents in the treatment group were given additional information during the Family Reading Night on how to access the closed captioning at home on their screens using their cable company or their streaming device. If their child wanted to watch a DVD (at home or in the car), they were given directions on how to access English subtitling under SETUP or Languages on the DVD menu. The treatment group was responsible for troubleshooting their own technological devices at home to ensure they had the closed-captioning service enabled on their television. They also were given a contact number to call for tech help, if a problem occurred.

Instruments

Dynamic Indicators of Basic Early Literacy Skills (DIBELS). DIBELS are a set of assessments used for screening and progress monitoring in Grades K-6. Each test is standardized, efficient, and extensively researched (Good et al., 2002). The DIBELS assessment is currently administered to over 2 million schoolchildren nationwide. DIBELS scores—spring end-of-year first grade and fall beginning-of-year second grade—was used to assess oral reading achievement. The DIBELS assessment has been used in the school district for more than 10 years as the adopted reading assessment in kindergarten, first, and second grades. The oral fluency test is given in first and second grade. As part of regular practice in the school/district, the classroom teachers give all children three different reading passages that measure the child's skill at recognizing and reading words rapidly and accurately within a 1-minute time frame. The classroom

teachers then take the average of the accuracy rate of words read in 1 minute and report that as the oral reading fluency score. The oral reading fluency test was chosen because it is a common assessment with high validity to gauge student reading achievement.

The DIBELS test has been shown to be a valid and reliable tool, especially if administered by the same educator, because it is a very practical tool and is used on thousands of children across the United States (Elliott, Wee, & Tollefson, 2001). However, many believe it has done more harm than good in the goal of creating readers because some literacy experts feel it has focused on just a few sub-skills and driven curricula and policy so much that many children are taught these sub-skills rather than given a rich balanced experience in the world of literature and writing that supports creating avid and ferocious readers (Good, 2010). However, the fluency test given in the DIBELS is very similar to other fluency assessments used across the nation proven to be valid and reliable (Elliott, Wee, & Tollefson, 2001).

Post Parent Survey on Child's Home Reading (PPSCHR). The other instrument in this study was a survey completed by parents on family demographics and various aspects of their child's home reading behaviors during the summer months over which this study was conducted. This asked the parent to answer questions about socioeconomic status, race/ethnicity, and language—all factors that affect a child's reading achievement. Other questions on the survey that may affect a child's reading achievement regarded home support. Home support includes the number of books in the home and time spent reading aloud to the child, both of which have been shown to be positively correlated with literacy achievement in first grade (Dickinson & DeTemple, 1998). Access to books and reading material is important information because children

who come from homes with more books often do well in school despite their socioeconomic status and parent's education level (Cahill et al., 2013). The other items on the survey related to how much the child read independently over the summer, since over 30 years of research shows that the only summer activity that improved reading achievement was summer reading (Cahill et al., 2013; Heyns, 1978). Due to the intervention of using closed captioning and same-language subtitling on television in the home in this study, the survey also asked parents to report the amount of television the child watched during the summer and the percentage watched where closed captioning or same-language subtitling were present. Because the attitude of the parents about TV often carries over to the child, an item on whether parents think the words on screen are increasing reading achievement was also added to the PPSCHR (Wainwright, 2010). This survey was designed specifically for this study. To establish validity, this survey was piloted with a small group of parents like those asked to participate in this study. A separate consent was used for this piloting.

Procedures

The following is a list of procedures in chronological order that the researcher took to conduct this study.

1. An email was sent to the Director of Assessment in the school district asking permission to contact the principals of the Title 1 eligible schools to recruit participants (parents of first graders) for the summer reading study.
2. Once permission was granted, a recruitment letter addressed to the eligible parents in each school, explaining the summer reading study, providing the background of the researcher, and indicating that the permission of the parent of the first grader

would be sent to the Director of Assessment and the two principals of the Title 1 eligible schools for feedback and approval. Letters to the principals and to the teachers also were sent to explain the study.

3. Once the recruitment/permission letter was approved, the two principals asked the teachers of first-graders to send it home to the parents of their students through the teachers' regular communication methods (to go home in backpack or attached through parent email list). Principals and classroom teachers encouraged families of first-graders to join the summer study verbally and through class, school newsletters, even emails to these parents/guardians.
4. All parents/guardians interested signed an initial consent form. By signing this they agreed to (a) submit to release a copy of the printout report of their children's first-grade spring oral reading fluency scores and fall second-grade oral reading fluency scores on the DIBELS assessment to the researcher, (b) answer items on the PPSCHR regarding demographic information and their child's home reading habits during the summer months, and (c) agree to attend an information night where they would learn about the benefits of summer reading and preventing the summer slide. The treatment group would also learn how to access closed captioning and same-language subtitling on the television to use as a literacy tool in the home environment over the summer months.
5. Two family reading nights for each group were arranged at each school for a total of four family reading nights. During these presentations, a PowerPoint presentation on how to prevent the summer slide was shared. The families of each group also received three books for participating in the study. Consents were

signed and the handout of the PowerPoint presentation was given to each family. The treatment group was given further information on how to enable closed captioning and same-language subtitles on their television in their home so words would appear on the screen during all shows viewed including children's television programs, streaming devices, cable companies, and DVDs.

6. A once-a-week reminder was emailed to the parents in the treatment group about using closed captioning and same-language subtitling to ensure this tool was being used in the home.
7. Parents in the treatment group provided their children access and use of closed captioning and same-language subtitling at home during the summer months.
8. Both groups attended an event called a "book fair" in the fall one evening outside of the regular school day and completed the PPSCHR. Those who could not attend that night were sent a copy of the survey and emailed it back. Each survey was numbered to keep track of the total number administered so returned surveys had no names (only numbers) to maintain confidentiality. Books were left at the schools for these students whose parents chose to return the survey via email.
9. Principals of each school submitted the formal reports of the Spring end-of-year first grade and Fall beginning-of-year second grade DIBELS test scores for each participant in the study.

Reliability and Validity

The first internal threat to the validity of this study is the complications with television media centers within each family home. If families are unable to access closed captioning or same-language subtitling on their televisions and other technological

devices, then obviously the child in the treatment group would not be using this as a literacy tool in the home and, therefore, would not be experiencing the treatment, resulting in a lack of fidelity to the treatment. Precautions were taken by researching all the cable companies and streaming devices offered in the community and creating a PowerPoint that presented this information at the mandatory information meeting. In the handout of that information that was given and emailed to the families on how to enable closed captioning, there were also local cable company numbers to contact if assistance was needed. There was also a helpline and email available to support parents if problems arose regarding the equipment involved.

Another issue that may arise was the child insisting the words be removed from the television screen. The child might say, "I don't like the words! Take them off!" This was anticipated and since the study should not cause conflict between parents and the child, a child's contract was created for families to use. This was a contract that parents in the treatment group were asked to use with their child, saying children will watch television or movies only if there were words on the screen. It was also recommended that the families keep a copy of that signed agreement somewhere close at hand to refer to just in case. It was also shared with the families during the presentation the idea of sharing a "new TV rule," which was "Yes words, Yes TV, No Words, No TV."

Another issue was if the parent forgot to push the closed-captioning/subtitle button. To deal with this, the researcher emailed a reminder each week during the summer to the parents in the treatment group. The researcher also asked that the closed-captioning button on their own normal television programming stay on throughout the summer instead of turning it on and off. There also was a question added on the post

parent survey about the percentage of time children watched TV with words on the screen (closed captioning or same-language subtitling) since that may affect the intervention as well. A child who watched only 20% of TV with closed captioning compared to a child who watched it 100% of the time would be of great importance. Because the attitude of the parent about TV often carries over to the child, a question about if the parents thought the words on screen were creating better reading also was added to the PPSCHR (Wainwright, 2010).

Because children are not always with their parents every time they view television, especially over the summer months, and some lived in two different homes as sometimes occurs in families with parents who are divorced, the families were given a letter addressed to other parents, step-parents, babysitters, relatives, and any other caretakers or childcare providers that explained the importance of always making sure that closed captioning or same-language subtitling was in use when that child was watching television.

The copy of the PowerPoint, child contract, and letter about the study for other caretakers were all given to the parents in the treatment group during the family mandatory information night at the beginning of summer.

Maturation also was an internal threat to this study because the children who will be "reading TV" versus not are first-graders who are 7- and 8-year-olds and developing emotionally, physically, and cognitively at a very fast pace. However, by using a comparative design in this study where children are from two very similar demographic schools, it was reasonable to presume that both the treatment group and the control group experienced maturation at about the same rate, therefore decreasing this threat. Unless,

the mean age of each group was very different (which would be discovered on the PPSCHR) this would not likely be an influential factor. Subject characteristics such as the child's attitude toward reading and toward television could be a threat, but in this case where children are essentially reading TV, they may not see themselves as reading when watching television with words, so their prior attitude about reading books may not have affected their attitude toward reading TV. Most children like TV, so if there was a child who did not want to watch TV at all, that would be a threat, but this was difficult to imagine given the statistics that a child over the age of 6 watches 3 to 4 hours of television each day (U.S. Department of Commerce, U.S. Census Bureau, 2012).

The DIBELS instrument has its limitations, however it is still a measure proven to be a valid and reliable to measure reading achievement in young children. It is a practical tool, with little materials used, and is widely used across the United States to assess the reading achievement of young children, and is administered as a regular part of school/district practice by the schools that the children in this study attended. To keep this study as authentic as possible, the DIBELS assessment scores obtained by schools in the district were the scores that the school principal provided to the researcher for children of the participating parents (parents gave permission). To make sure the correct data for each student was transferred from the school to the researcher; the principal provided a printout of the DIBELS score for each child in the study. To ensure confidentiality, each name was covered on the printout and coded by being given a number. This document was a valid form of a pre- and posttest measure.

Also, all families were required to report demographic information to attempt to pinpoint the effectiveness of the closed captioning and same-language subtitling

treatment. Such information included the amount of time their child was read aloud to, the number of books in the home, the time the child spent reading independently, and the amount of time TV was watched by the child.

Another possible threat is the length of study, which took place over a 14-week period. Asking families to use closed captioning or same-language subtitling may have contributed to mortality—i.e., families dropping out of the study. However, since most of the families of first-graders were volunteering for this study because they wanted to help their child improve their reading over the summer, there was a high possibility they would sustain. The added incentive of books for their children potentially helped recruitment and sustainability.

The last threat that could have affected this study was that some families were already using closed captioning in the home. This is why a question was added to the parent survey about who had already used closed captioning with their child and for how long, knowing that this may affect the reliability and validity of the results if this information was not discovered.

Data Analysis

Dynamic Indicators of Basic Early Literacy Skills (DIBELS). First, descriptive statistics were computed for the children's DIBELS scores (means and standard deviations). Next, children's DIBELS oral reading fluency test scores from the end-of-year Grade 1 (EndYear1) and beginning-of-year Grade 2 (BeginYear2) were compared by computing a 2x2 ANOVA. The hypothesis was that there would be a statistically significant (a) main effect for the posttest mean compared to the pretest

mean, (b) main effect for the treatment condition compared to the control condition, and (c) interaction effect for the posttest treatment condition.

	Pretest	Posttest
Control	Dibels mean Spring no closed captioning	Dibels mean Fall no closed captioning
Treatment	Dibels mean Spring closed captioning	Dibels mean Fall closed captioning

Figure 2. Design overview.

As discussed earlier, the treatment group was from one Title 1 school and the control group was from another in order to prevent contamination of the treatment at the control school site. Analyses included the descriptive statistics of the EndYear1 first-grade pretest scores and the BeginYear2 second-grade posttest scores and the descriptive information including demographic information from the results of the PPSCHR.

Post Parent Survey of Child Home Reading (PPSCHR). This questionnaire was designed for this study, informed by research known about summer reading habits (Cahill et al., 2013; Dickinson & DeTemple, 1998; Heyns, 1978). It assessed the following: (a) how many books were in the home, (b) time spent daily reading aloud to the child during summer, (c) time the child spent reading independently daily during summer, (d) time the child spent viewing television daily during the summer, and (e) demographic information including family income level, child's race/ethnicity, age, and

first language. This would enable the researcher to properly identify and compare the characteristics of each group for socioeconomic, race, age, and language characteristics, all of which are factors that can influence reading achievement. The data on how many books are in the home, how often the parent read aloud to the child weekly over the summer, how often the child read independently weekly over the summer, and how often the child viewed television weekly over the summer were interval data. In summary, the information provided by parents on the PPSCHR (tallies, percentages, etc.) was used to assess equivalency across the two conditions on the factors that influence reading achievement.

Summary

This comparative quasi-experimental study compared the DIBELS scores of two groups of first graders from two Title 1 schools to determine if closed captioning and same-language subtitling on television (compared to none) over the summer months may yield significant results in preventing the summer slide. The findings are important because if results validate positive anticipated outcomes, this practical cost effective (free) tool may be used in the home to increase reading achievement in all types of children from all different backgrounds during the summer months.

CHAPTER 4

FINDINGS

Introduction

The purpose of the study was to discover whether closed captioning and same-language subtitling on TV and/or movies could be used as a supplementary tool in the home during the summer months to increase reading fluency and therefore prevent the summer slide—a decrease in reading achievement specifically that often occurs during summer months. The following research questions guided this study:

1. To what extent does using closed captioning and same-language subtitling on television in the home during the summer increase a child's oral reading fluency?
2. To what extend does using closed captioning and same-language subtitling on screen in the home during the summer prevent a decrease in reading achievement known as the "summer slide"?

This chapter begins by providing a rationale that explains why some participants' data were removed from the study. The chapter continues by presenting the results from the two sources of data collected: (a) the Post Parent Survey of Child Home Reading (PPSCHR) questionnaire on demographics and home television viewing and reading behavior, and (b) DIBELS oral reading fluency scores that were compared from the end-of-year in first grade to beginning-of-year in second grade.

Rationale for Removing Participant Data

Although 40 parents initially agreed to participate in the study over the summer, six dropped out due to various reasons, including moving and health reasons. The original DIBELS oral fluency score data and the parent survey data therefore were from

34 participants, 16 in the treatment group and 18 in the control group. Initial analyses indicated there were four outliers that did not adhere to the specified treatment or control conditions.

Specifically, one parent from the treatment group reported that his/her child had only watched closed captioning on television 20% of the time in the summer, which violated fidelity to the treatment. Furthermore, three participants in the control group also were removed because, after analyzing data from the parent survey, it was discovered that three students in the control group had watched CC and subtitling before the study began and during the summer in which the study took place. This violated the conditions of the control condition, which required no viewing of CC television viewing. Instead, all three had been watching CC on regular programming or subtitling in English on movies 90% of the time over varying lengths of time (from 10 months to 5 years) prior to the start of this study.

In summary, this study analyzed the reading fluency scores of 30 students total—15 in the treatment group and 15 in the control group—comparing end-of-first-grade to beginning-of-second-grade DIBELS scores, in addition to the survey submitted by the parent of each of these children at the end of the study.

Results

Post Parent Survey of Child Home Reading (PPSCHR)

The PPSCHR was the questionnaire designed for this study; its development was informed by research known about summer reading habits (Cahill et al., 2013; Dickinson & DeTemple, 1998; Heyns, 1978). Results are grouped into treatment (n = 15) and control (n = 15) groups in order to compare how variables pertinent to reading

achievement may have affected reading scores for each group of students during the summer.

Survey Item 1 asked the parent participants for the number of books that were present in their home, as this is an outside variable that has shown to affect reading achievement. The more books in the home, typically the more likely a child achieves high scores in reading (Neuman & Celano, 2001). The fewer number of books in the home, the more a child tends to struggle and the lower the child's reading scores. In the summer months especially, children with a small number of books in their home have a great chance of sliding (Neuman & Celano, 2001). An independent- sample *t* test compared the means of the treatment and control group. The independent variable in Table 2 was treatment vs. control and the dependent variable was the number of books in the home. The treatment sample (n = 15) had a mean score of 144.67 or 145 books when rounded and the control group (n = 15) had a mean score of 148.67 or 149 books when rounded. The mean difference was 4.0 and the control group had a higher score by 4.0. No significance difference was found $t(28) = .080$, $p > .05$. The mean of the treatment group that had watched closed captioning and subtitling on TV over the summer months (M = 144.67, SD = 139.482) was not significantly different from the mean of the control group that had not (M = 148.67, SD = 135.784). These results appear in Table 2.

Table 2

Survey Item 1: Books in Home

	Treatment (n = 15)		Control (n = 15)			
Comparison	*M*	*SD*	*M*	*SD*	*t*	*p*
Books	144.67	139.482	148.67	135.784	.080	.902

*$p < .05$.

Survey Item 2 asked the parent participants for the number of TVs that were present in their home, as this number tends to affect the time a child spends watching TV, which is a factor that has shown to affect reading achievement (Trelease, 2013). An independent- sample *t* test compared the means of the two samples. The independent variable in Table 2 was the presence or absence of treatment and the dependent variable was the number of TVs in the home. The treatment group (n = 15) had a mean score of 1.80 and the control group (n = 15) had a mean score of 1.67. The mean difference was .13 and the treatment group had a higher score by .13 showing that the treatment group had more households with more TVs on average than the control group. A significant difference between the means of the two groups was found $t(28) = -.414$, $p = .902$. The mean of the treatment group that had watched closed captioning and subtitling on TV over the summer months (M = 1.8, SD = .676) was significantly higher than the mean of the control group that had not (M = 1.67, SD = 1.047). These results appear in Table 3.

Table 3

Survey Item 2: TV in Home

	Treatment (n = 15)		Control (n = 15)			
Comparison	*M*	*SD*	*M*	*SD*	*t*	*p*
TVs	1.80	0.676	1.67	1.047	-.414	.038*

*$p < .05$.

Since there is research verifying that children who have TVs in their bedroom often score lower on reading than children who do not have TVs in their bedroom (Trelease, 2013), in the third survey item, parent participants were asked to report if the child did or did not have a TV in their bedroom. A chi square test was done on these nominal variables. There were only three children in each condition (treatment and control) who had TVs in their bedroom, and there was no significant difference between the two groups with each group having 12 (85.7%) children who did not have a TV in their bedroom and three (14.3%) who did have a TV in their bedroom as shown in Table 3. A chi-square goodness of fit test was calculated comparing the frequency of occurrence of TVs in a child's bedroom between both conditions. It was hypothesized that each value would occur an equal number of times. No significant deviation from the hypothesized values was found $.X^2(1) = .674$, $p > .05$. These results appear in Table 4.

Table 4

Survey Item 3: TV in Bedroom

Condition	*n*	No	Yes
Treatment	15	12 (85.7%)	3 (14.3%)
Control	15	12 (85.7%)	3 (14.3%)

Note. Each condition had the same number of children who had TVs in their bedrooms.

Since there is also research supporting the idea that children who attend educational and enriching programs and camps over the summer tend to benefit academically and may help prevent the summer slide, Survey Item 4 asked parent participants to report if their child attended any camps or programs and to name them. A chi-square test was performed. There were six (40%) children in the treatment group ($n = 15$) and five (33%) children in the control group ($n = 15$) who did not attend any programs or camps over the summer. There were nine (60%) children in the treatment group and 10 (66%) children in the control group who did attend summer camps or programs. There was no significant difference between the two groups. A chi-square goodness of fit test was calculated comparing the frequency of occurrence between both conditions. It was hypothesized that each value would occur an equal number of times, $X^2(1) = .705$, $p > .05$. These results appear in Table 5.

Table 5

Survey Item 4: Attendance at Summer Programs

Condition	*n*	No	Yes
Treatment	15	6 (40%)	9 (60%)
Control	15	5 (33%)	10 (66%)

Note. Children attended a wide variety of education/camp programs over the summer.

Nine children in the treatment group attended educational camps and programs over the summer as reported by their parents on the survey. These included one child who attended Martial Arts and Vacation Bible Camp; one who attended the school district summer school; one who attended Nature Camp; one who attended Mad Science and football/basketball; one who attended a Providence camp for children with special needs; one who attended Parks and Rec Jr. Day Camp (science themes); one who attended Early World's Children School, Science, Art, Soccer, Sport, one who attended Girl Guide Camp; and one who attended a Speech Camp.

Ten children in the control group attended educational camps and programs as reported by their parents on the survey. This included: one who attended Vacation Bible School and Keller Reading Program; one who attended a 4-day Girl Scout Camp; one who attended LWSD Literacy Camp (reading safety net); one who attended the Keller Reading Program, Marine Wildlife Camp, Zoo Camp, and Sport Camp; one who attended Wilderness Awareness Camp, Cub Scout Camp, Humane Society Camp, Guitar lessons, KCLS Reading Competition; one who attended Kirkland Parks and Rec and Sounders Soccer Camp; one who attended the Keller Reading Program and ELL Camp; and one

who attended Theater Camp. Two kids attended the Keller Reading Program only. Five kids in all attended the Keller Reading Program.

Since five (33%) or one-third of students in the control group (n = 15) attended the Keller Reading Program, a description of this specific camp is provided. The Keller Reading Program was a school-sponsored summer reading program organized and facilitated by the principal and the teachers at the control school. Students and families were invited each Wednesday evening in the summer for two hours to eat dinner, check out books from the school library, and consult with teachers on reading strategies, free of charge. Parents were given a reading envelope with information on how to help their child succeed in reading and this is also where the children kept their "summer reading" log and books.

Survey Item 5 asked the parent participants for the number of minutes their child spent reading print (in a book, newspaper, comics, etc.) on average by themselves each day of the summer, a factor that has been shown to greatly affect reading achievement, especially over the summer (Allington & McGill-Franzen, 2013). An independent-sample t test compared the means of the two groups. The independent variable in was the grouping variable and the dependent variable was the number of minutes read daily. The treatment sample (n = 15) had a mean score of 33.67 or 34 minutes read daily (when rounded) and the control group (n = 15) had a mean score of 20.33 or 20 minutes (when rounded) read daily. The mean difference was 13.34, so the treatment group had a higher mean score by 13.34 or 13 minutes (when rounded) read daily per day showing that the children in the treatment group spent more time reading by themselves with print than the control group during the summer in which the study took place. A significant difference

between the means of the two groups was found $t(28) = (-1.613)$, $p < .05$. The mean of the treatment group who had watched closed captioning and subtitling on TV over the summer months ($M = 33.67$, $SD = 30.087$) was significantly higher from the mean of the control group that had not ($M = 20.33$, $SD = 10.933$). These results appear in Table 6.

Table 6

Survey Item 5: Minutes Read Print

Condition	*n*	*M*	*SD*	*t*	*p*
Treatment	15	33.67	30.087	-1.613	.032*
Control	15	20.33	10.933	-1.613	

*$p < .05$.

Another significant variable that affects reading achievement is the amount a child is read aloud to each day (Trelease, 2013). Because of this, Survey Item 6 asked parent participants to report the minutes they read aloud to their child over the summer. An independent- sample *t* test compared the means of the two samples. The independent variable was the grouping variable and the dependent variable was the number of minutes read aloud daily. The treatment group ($n = 15$) had a mean score of 20.67 or 21 minutes (when rounded) read daily and the control group ($n = 15$) had a mean score of 14.67 or 15 minutes (when rounded) read daily. The mean difference was 6.00, so the children in the treatment group had a higher mean score by 6.00 or six minutes. They essentially were read aloud to six more minutes daily over the summer than the children in the control group. No significance difference was found $t(28) = (-.939)$, $p > .05$. The mean of the

treatment group that had watched closed captioning and subtitling on TV over the summer months (M = 20.67, SD = 21.865) was not significantly different from the mean of the control group that had not (M = 14.67, SD = 11.568). These results appear in Table 7.

Table 7

Survey Item 6: Minutes Read Aloud To

	Treatment (n = 15)		Control (n = 15)			
Comparison	*M*	*SD*	*M*	*SD*	*t*	*p*
Minutes	20.67	21.865	14.67	11.568	-.939	.490

*$p < .05$.

Survey Item 7 asked the parent participants for the number of minutes their child spent watching TV (regular programming on cable channels and/or movies on DVD) on average each day during the summer, a factor that has been shown to greatly affect reading achievement. An independent-sample t test compared the means of the two samples. The independent variable was the grouping variable and the dependent variable was the number of minutes watched daily. The treatment group (n = 15) had a mean score of 106.00 or 1 hour and 36 minutes watched daily and the control group (n = 15) had a mean score of 67.33 or 1 hour and 7 minutes (when rounded) watched daily. The mean difference was 38.67, so the treatment group had a higher mean score by 38.67 or 39 minutes (when rounded) and watched 39 minutes per day showing that the treatment

group spent more time watching TV than the control group during the summer in which this study was conducted. A significant difference between the means of the two groups was found $t(28) = -2.074$, $p < .05$. The mean of the treatment group that had watched closed captioning and subtitling on TV over the summer months ($M = 106.00$, $SD = 58.773$) was significantly higher than the mean of the control group that had not ($M = 67.33$, $SD = 41.955$). These results appear in Table 8.

Table 8

Survey Item 7: Minutes Watched TV

	Treatment ($n = 15$)		Control ($n = 15$)			
Comparison	*M*	*SD*	*M*	*SD*	*t*	*p*
Minutes	106.00	58.773	67.33	41.955	-2.074	.026*

Note. TV meaning regular television programming on cable channels or movies on DVD.
*$p < .05$.

It was important to discover what percent of television the children watched in both conditions that had closed captioning and subtitling since this may affect the findings of the study. Just like minutes read over the summer, the minutes children watched TV over the summer was also a very important variable that could influence the results of this study.

Survey Item 8, therefore, was included to try to determine fidelity to conditions (treatment versus control). This item asked the parent participants for the percentage of

total television time the child watched with words on the screen (closed captioning or subtitling in English) during the summer in which the study took place. An independent-sample *t* test compared the means of the two samples. The independent variable was the grouping variable and the dependent variable was the number of minutes watched daily. The treatment sample ($n = 15$) had a mean score of .8493 or 85% and the control group ($n = 15$) had a mean score of .0000 or no words on screens watched daily. The mean difference was .8493, so the treatment group had a higher mean score by .8493 or 85%. The children in the treatment group used closed captioning and subtitles on TV 85% of the time during the summer months that the study occurred compared to the control group that watched TV with none. A significant difference between the means of the two groups was found; $t(28) = (-21.857)$, $p < .001$. The mean of the treatment group that had watched closed captioning and subtitling on TV over the summer months ($M = .8493$, $SD = .15050$) was significantly higher than the mean of the control group that had not ($M = 0$, $SD = 0$). These results appear in Table 9.

Table 9

Survey Item 8: Percent of Summer CC and Subtitling

	Treatment ($n = 15$)		Control ($n = 15$)			
Comparison	*M*	*SD*	*M*	*SD*	*t*	*p*
CC/Subtitles	.8493 (85%)	.15050	0	0	-21.857	.000***

***$p < .001$.

Since there is much research to support that parents want the best for their children and will implement strategies if they are simple and if they think they will help their child become successful, Survey Item 9 asked parent participants to report if they felt the use of closed captioning and/or subtitling on TV for their child would make their child a better reader. A cross-tabulation was performed. There were nine (60%) parents in the treatment group (n = 15) who felt it indeed did help make their child a better reader. There were no parents who felt it did not make their child a better reader. The remaining six parent participants were not sure if closed captioning and/or subtitling on TV helped their child to be a better reader. This question was not applicable for the control group (n = 15) as their children did not watch closed captioning or subtitling during the summer months. These results appear in Table 10.

Table 10

Survey Item 9: Parent Feelings

Condition	*n*	Yes	No	Not Sure	N/A
Treatment	15	9 (60%)	0	6 (40%)	0

Note. This item was not applicable to parents in the control group (n = 15) because their children did not watch television with closed captioning and/or subtitles in English over the summer as reported in Table 9. Although this item appeared on the survey administered to the control parents, none of them responded to it.

Because the data for the three students who had watched closed captioning in the control group were removed from this study, it was important to make sure the treatment group also did not have that variable of prior closed captioning experience. Therefore, Survey Item 10 asked parent participants if their child had watched closed captioning

and/or subtitling in English before this past summer. A cross-tabulation was used to analyze this information. There were 4 (27%) students in the treatment group who had used closed captioning and/or subtitling before the summer and 11 (73%) who had no prior experience. The control group had zero children who had prior experience using CC and subtitling. These results appear in Table 11.

Table 11

Survey Item 10: Prior Percent of CC and Subtitling

Condition	*n*	Yes	No
Treatment	15	4 (27%)	11 (73%)
Control	15	0 (0%)	15 (100%)

If parents responded to Survey Item 10 affirmatively, then they were asked to complete an additional item that asked how long before the summer in which this study took place had their child they been watching closed captioning. For the four parents who marked "yes" to this additional item, the mean time reported was 4 months. The researcher determined that it was reasonable to conclude that 4 months of exposure to CC and subtitling prior to the study would not likely affect the study's findings, so all four participants were retained in the study.

It also was important to discover if there were any children who had special needs across the two conditions, as research often suggests children who have been identified with a disability—especially in reading or writing—may have a harder time achieving and be more likely to slide in the summer without regular intervention and extra support

provided in the regular school year (Cahill et al., 2013). Survey Item 11 asked parents to provide disabilities information. Parent participants in the treatment group (n = 15) reported that 12 (80%) children were not identified as having a disability and three (20%) were identified as having a disability. The parent participants in the control group (n = 15) reported 14 (93%) of these children had not been identified with a disability, while one (7%) had been identified with a disability. Parents checked further boxes to share the areas their child was receiving extra support. In the treatment group, the three students identified as having a disability received the following types of support: one was identified as having a learning disability and received services in the area of writing, and this same student also was diagnosed with ADHD and received special services in occupational therapy, speech, and counseling; another was identified as having a learning disability in the areas of reading and math and was receiving services for speech; the third was identified as having a learning disability in the area of reading and received special education services for fine and gross motor, speech, and social skills. In addition, one student in the treatment group was identified as talented and gifted. In the control group, one student was identified as having a disability and received services in the area of reading. These results appear in Table 12.

Table 12

Survey Item 11: My Child has been identified with a Disability

Condition	*n*	No	Yes
Treatment	15	12 (80%)	3 (20%)
Control	15	14 (93%)	1 (7%)

Note. Specific disabilities varied.

To ensure that age of the children in both groups was not a variable that would affect the outcome, an independent *t* test was performed to compare the mean age in each group. The treatment group had a mean age of 91.6 months or 92 months when rounded, equivalent to a mean age of 7 years and 8 months. The control group had a mean of 90.67 months or 91 months when rounded, equivalent to a mean age of 7 years and 7 months. The control group on average was a month younger. These means were not significantly different; $t(28) = -.741$, $p = .923$. These results appear in Table 13.

Table 13

Survey Item 12: Mean Age

	Treatment ($n = 15$)		Control ($n = 15$)			
Comparison	*M*	*SD*	*M*	*SD*	*t*	*p*
Age in Months	91.60	3.203	90.67	3.677	-.741	.923

*$p < .05$.

Since gender also typically is an issue in equity in education (Sahin, 2014). Survey Item 13 asked parents to report the gender of their child. A cross-tabulation was performed and revealed that the treatment group (n = 15) was comprised of seven boys (47%) and eight girls (53%)—nearly equal numbers across genders. The control group, however, had only three boys (20%) and 12 (80%) girls. These results appear in Table 14.

Table 14

Survey Item 13: Gender

Condition	*n*	Boy	Girl
Treatment	15	7 (47%)	8 (53%)
Control	15	3 (20%)	12 (80%)

To discover the race/ethnicity of the children, Survey Item 14 asked parent participants to identify the classification that best described their child and a cross-tabulation was performed. This is an important indicator because much research suggests children of minority status receive unequal access to the American school system (Ladson-Billings & Tate, 1995). The treatment group (n = 15) had a range of students with diverse races/ethnicities as follows: four children were Hispanic, one was Pacific Islander, seven were Caucasian, one was Indian, one was Middle Eastern, and one was described as Chinese/Vietnamese (marked "Other" on this survey item). The control group (n = 15) had 11 students identified as Caucasian/White, two as Hispanic, and two who marked "Other"—one wrote in Black and the other wrote in Asian/White. These results appear in Table 15.

Table 15

Survey Item 14: Race/Ethnicity

Condition	*n*	Hispanic	P. Islander	Caucasian	Indian	M. Eastern	Other
Treatment	15	4	1	7	1	1	1
Control	15	2	0	11	0	0	2

Note. "Other" for treatment is Chinese/Vietnamese and for control is one Black and the other Asian/White.

Since research also shows that English language learners (ELLs) may have a harder time learning to read, Survey Item 15 asked parent participants about language. The treatment group (n = 15) reported 11 (73%) students had English as their first language and 4 (27%) did not. The control group (n =15) reported that 14 students had English as their first language and one did not. These results appear in Table 16.

Table 16

Survey Item 15: English First Language

Condition	*n*	Yes	No
Treatment	15	11 (73%)	4 (27%)
Control	15	14 (93%)	1 (7%)

Note. Students whose first language was not English had a variety of other first languages.

The second part to this survey item asked parent participants to share the language spoken in the home if English was not the first language. The treatment group had four

students who did not speak English as their first language. They spoke other languages at home, including one child who spoke Polish, two who spoke Farsi, and one who spoke Chinese/Vietnamese. The control group only had one student who did not speak English as his/her first language; this student spoke Spanish as the first language.

It also was important to obtain information on socioeconomic status because this is highly correlated to the early literacy development of children (Steesel, 2006). Survey Item 16 asked parent participants about average household income. The mean of the treatment group (n = 15) was $102,554.62, whereas the mean of the control group (n = 14) was $120,662.33 (one participant in the control group did not feel comfortable replying to this survey item). These results appear in Table 17.

Table 17

Survey Item 16: Average Household Income

Income Level	Treatment (n = 15)	Control (n = 14)
$0-24,999	1	0
$25-49,999	2	1
$50-74,999	1	2
$75-99,999	5	2
$100-124,999	2	1
$125-149,999	0	4
$150-174,999	1	2
$175- 199,999	2	2
$200,000 or more	1	0
Mean	$102,554.62	$120,662.33

Note. One participant in the control group did not feel comfortable replying.

Finally, Survey Item 17 gave the parent participants an opportunity to share any information with the researcher about participating in the summer study on preventing the summer slide. There were 11 of 15 parent participants in the treatment group and seven of 15 parent participants in the control group who shared information. The main theme that emerged from the control group was that the parents wanted to know what research indicates about how much parents valuing reading and books and their daily reading habits affect children's reading success. The themes that emerged from the treatment group focused on media accessibility and friendliness, enjoyment, sustainability, and

beliefs about the effect of CC and subtitling. It seemed that keeping CC on cable was best instead of turning it on and off, Amazon kept on subtitles, and movie subtitles were favored for more accessibility over CC on cable. It also seemed that children enjoyed reading the words on the screen and it even carried over to them finding interest in the same topics in books they wanted to read. Another theme that emerged is that parents were indeed going to continue using CC and subtitling for their children and sustain this practice in their home. The final theme that emerged was that they believed CC and subtitling was helping their first grader become a better reader but also their younger children of kindergarten age. See Appendix K to see full comments shared by parents.

Summary of PPSCHR Results

The PPSCHR questionnaire administered to parents at the end of this study provided information that showed differences and comparisons between the treatment and the control group on factors relevant to reading achievement. Table 18 that follows summarizes the results from all of the PPSCHR items to show the demographic and outside variable information pertinent to reading achievement across the treatment and control groups in this study.

The demographic information showed some similarities and some differences across the two conditions. For example, the average age of the children in each group was similar; the treatment group children's mean age was 7 years and 7 months and the control group's mean age was 7 years and 8 months (only 1 month apart). This suggests that maturation may not have been a limitation in this study. Regarding gender, the treatment group had eight girls and seven boys, while the control group had 12 girls and three boys; this was quite different. Regarding race and ethnicity, the treatment group had

seven Caucasian children and eight of different races/ethnicities, while the control group had 11 Caucasian children and only four of different races/ethnicities. The treatment group had an average income household just over $100,000 while the control group had a mean average income household over $120,000. The treatment group had three children who were identified with disabilities and were receiving support services, while the control group had only one child identified with a disability and receiving support services. The treatment group had one child identified as talented and gifted and the control group had none. The treatment group had four children whose first language was not English, while the control had only one such child.

There were three areas of statistical significance between groups regarding outside variables that may have affected the results of the DIBELS fluency scores of each group. Specifically, statistically significant differences were found between the treatment and control groups in the number of minutes children read each day in the summer, the number of minutes each child watched TV each day in the summer, and the number of TVs in the home. However, the two groups were similar in other statistical comparisons, including the number of minutes children were read each day, the number of books in home, the number of TVs in the children's bedrooms, and the number of children who attended various types of summer camps/programs.

Table 18

PPSCHR Summary of Results

	Treatment	Control	*p*
Child's Age	91.60 (7 yrs. 8 m.)	90.67 (7 yrs. 7 m.)	$p = .932$
Gender			
Male	7	3	
Female	8	12	
Race/ethnicity			
Hispanic	4	2	
Pacific Islander	1	0	
Caucasian	7	11	
Indian	1	0	
Middle Eastern	1	0	
Asian	1	1	
Black	0	1	
Income Level	$102,554.62	$120,662.33	
Disability			
Yes	3	1	
No	12	14	
ADD	1	0	
Speech	3	0	
Reading	3	1	

Table 18 (continued)

	Treatment	Control	*p*
Talented and Gifted	1	0	
ELL			
Yes	4	1	
No	11	14	
Minutes read	33.67	20.33	$p = .032$*
Minutes read aloud to	20.67	14.67	$p = .490$
Minutes watched TV	106.00	67.33	$p = .026$*
Books in Home	144.67	148.67	$p = .902$
TV in Home	1.80	1.67	$p = .038$*
TV in Bedroom			
Yes	3 (14.3%)	3 (14.3%)	
No	12 (85.7%)	12 (85.7%)	
Summer Camps			
Yes	9 (60%)	10 (66%)	
No	6 (40%)	5 (33%)	

*$p < .05$.

DIBELS Fluency Scores

Table 19 that follows presents descriptive information on oral reading fluency DIBELS scores, growth/regression, and whether the summer slide occurred for children in the treatment group. Similarly, Table 20 that follows presents descriptive information

on oral reading fluency DIBELS scores, growth/regression, and whether the summer slide occurred for children in the control group.

Table 19

Treatment Group Oral Reading Fluency DIBELS Scores

Student	EndYear1	BeginYear2	+Growth / -Regression	Summer Slide? Yes or No
#19[a]	117	128	+11	No
#21[c]	151	159	+8	No
#22[a]	34	71	+37	No
#23[b]	117	113	-4	Yes
#24[a]	108	111	+3	No
#25	29	30	+1	No
#26	62	58	-4	Yes
#27	105	109	+4	No
#28	31	66	+35	No
#29[b]	117	122	+5	No
#30	71	75	+4	No
#31[a]	80	67	-13	Yes
#32	92	95	+3	No
#33	131	120	-11	Yes
#34[b]	48	45	-3	Yes

[a]Student #19, #22, #24, #31 = English was not the first language; three of four did not slide but gained in reading oral fluency. [b]Student #23, #29, #34 = identified as having disabilities; two of three slid but only slightly. [c]Student #21 = identified as talented/gifted did not slide but gained.

Table 20

Control Group Oral Reading Fluency DIBELS Scores

Student	EndYear1	BeginYear2	+Growth / -Regression	Summer Slide? Yes or No
#1	23	35	+15	No
#2	152	125	-27	Yes
#3	160	157	-3	Yes
#5[b]	29	27	-2	Yes
#6	73	71	-2	Yes
#7	49	59	+10	No
#8	127	161	+34	No
#9	143	120	-23	Yes
#10	116	111	-5	Yes
#11	49	35	-14	Yes
#12	138	136	-2	Yes
#14	71	87	+16	No
#15[a]	116	111	-5	Yes
#16	82	93	+11	No
#18	142	156	+14	No

[a]Student #15 = English was not the first language; slid only slightly. [b]Student #5 = identified as having a disability; slid only slightly.

Past research would indicate that one would expect a "summer slide" on DIBELS oral fluency scores from first grade end-of-the-year to the second grade beginning-of-the-year (Allington & McGill-Franzen, 2013). Treatment group results revealed that five (33.3%) of the 15 children succumbed to the summer slide based on decreased DIBELS scores. This also means that 10 (66.6%) of the 15 children in the treatment group gained in oral fluency reading skills over the summer. Some made slight gains while other made great gains.

Treatment group results also revealed that three of four (75%) of the ELL children gained in reading fluency over the summer, which is counter to what may be expected based on past research. In fact, one ELL child had the largest gain with an increase of 37 words per minute from the end-of-the-year in first grade to the beginning-of-the-year in second grade. The mean improvement in oral fluency score of the four language learners was 9.5, which is 3.7 points higher than the mean of the entire treatment group. Based on past research, one also would expect that children identified with a disability would slide the greatest over the summer, but of the three children identified as having disabilities in the treatment group, one student gained, and two students slid only slightly. The child identified as talented and gifted in the treatment group gained by eight words per minute.

Control group results revealed that nine (60%) of those 15 students succumbed to the summer slide. This also means that six (40%) of the 15 students in the control group gained. The ELL student in this group did slide but very slightly (five words per minutes) and the child identified with a disability also slid very slightly (two words per minute).

It is important to discuss the types of slides and gains made in oral reading fluency DIBELS scores of the children during the summer months. The treatment group

children had zero with major slides, two with moderate slides, and three with slight slides for 5fiveslides total of the 15 children in that group. The control group children had two with major slides, one with a moderate slide, and six with slight slides for nine slides total of the 15 children in that group. Regarding gains, the treatment group had two children with major gains, one with a moderate gain, and seven with slight gains for 10 gains total of the 15 children in that group. The control group children had one with a major gain, five with moderate gains, and zero with slight gains for six gains total of the 15 children in that group. These results appear in Table 21.

Table 21

Types of Slides and Gains

Condition		Slide			Gain		
	n	Major	Moderate	Slight	Slight	Moderate	Major
Treatment	15	0	2	3	7	1	2
Control	15	2	1	6	0	5	1

Note. Major = 20+ difference between EndYear1 and BeginYear2 DIBELS scores; Moderate = 10+ difference; Slight = 0-9 difference.

The DIBELS oral reading fluency test scores from the end-of-the-year first grade and the beginning-of-the-year second grade were compared by computing a 2x2 ANOVA. The hypothesis was that there would be a statistically significant (a) main effect for the posttest mean compared to the pretest mean, (b) main effect for the treatment condition compared to the control condition, and (c) interaction effect for the

posttest treatment condition. There were no statistically significant results for any of these calculations.

Alternatively, means, standard deviations, *t* tests, and effect sizes were calculated for the treatment and control groups, respectively, to compare end-of-the-first year to beginning-of-the-second year DIBELS scores. Although these comparisons also were not statistically significant, the effect size of the treatment group is substantively greater than the effect size of the control group. These results appear in Table 22.

Table 22

Oral Reading Fluency DIBELS Comparison Scores

		EndYear1		BeginYear2				
Condition	*n*	*M*	*SD*	*M*	*SD*	*t*	*p* value	ES
Treatment	15	83.13	40.279	88.93	36.531	.933	.359	.15
Control	15	98.00	46.758	98.93	45.647	.622	.513	.02

Note. EndYear1 = Spring of Grade 1. BeginYear2 = Fall of Grade 2.
*$p < .05$.

Figure 3 that follows shows how the treatment group clearly made more gains than the control group according to the mean DIBELS oral reading fluency scores. The solid line represents the treatment group; the dotted line is the control group.

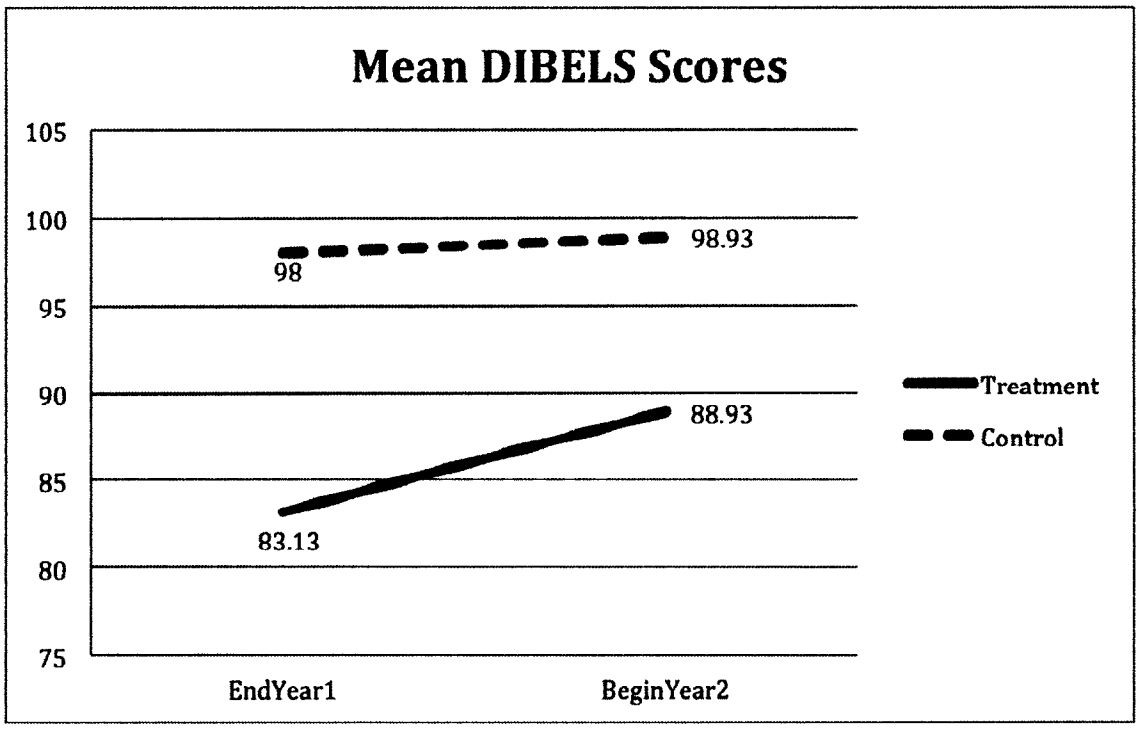

Figure 3. Mean DIBELS oral reading fluency scores.

Finally, *t* test was computed on DIBELS change scores between the treatment and control group. The control group increased by .93 or almost one word per minute, while the treatment group increased by 5.8 or six words per minute. Although this not statistically significant ($p = .384$), it does show that the treatment group increased reading achievement over the summer by 4.87 or five more words per minute than the control group. The *t* test does take into account the small sample size and this may be one reason these results are not showing significance. For this reason, it is important to calculate the effect size to show magnitude of gain of the treatment group relative to the control group. These results appear in Table 23 that follows.

Table 23

Oral Reading Fluency Change Score Comparisons

	Treatment			Control				
Change	*n*	*M*	*SD*	*n*	M	SD	*t*	*p* value	ES
Scores	15	5.80	14.31	15	0.93	15.77	-.885	.384	.32

The Southern Education Foundation reports that 51% of students in pre-kindergarten through 12th grade in the 2012-2013 school year were eligible for the federal program that provides free and reduced-price lunches. We know that in 2014 over 49.8 million students entered the public education system in either elementary or secondary schools. The important implication for this study is to look at all those children, specifically those children who live below the poverty level, to see if CC—a free tool that is in 99% of homes –can in fact help them achieve more. The effect size was .32. This could mean that if 50 million school children turned on closed captioning and subtitling when they watched television, there may be an increase in the reading over the summer for 156,250,000 children nationwide. Alternatively, if we look at first graders only, there are 1,000,000 United States alone, and if they all used CC, that could mean that instead of many sliding over the summer, 312,500 could be gaining in reading achievement over the summer. The fact that there is no cost, no extra time or effort to access this tool in the homes of these children makes this tool easy to implement and the effect more likely to be achieved. Keep in mind, however, that these projected figures are extrapolations from the findings in this dissertation study, which had a small sample.

Conclusion

The hypotheses that first grade students who watched words on television using closed captioning and same-language subtitling to increase reading achievement over the summer to prevent the summer slide was not supported, given the lack of statistical significance in the comparison tests conducted. It is reasonable to speculate that this was due to the small sample size in the treatment and control groups. However, results do confirm that first grade students, both native English speakers and those for whom English was not their first language, who watched TV at home where on-screen print was available, benefited by demonstrating increased reading achievement in the areas of oral reading fluency compared to similar children who did not watch closed captioning on TV during the summer months. The effect size analysis also confirms a greater magnitude of gain for the children who watched television with closed captioning and subtitling as a supplementary tool to boost reading achievement in the home over the summer months.

CHAPTER 5

DISCUSSION AND CONCLUSION

Introduction

The literacy rates among fourth grade students in America are shocking. Over 64% of all U.S. fourth graders are not reading at grade level and scored "below proficient" on the 2013 National Assessment of Education Progress (NAEP) reading test. Possibly even more alarming is the fact that among students from low-income backgrounds, 80% scored below grade level in reading (NAEP, 2013). And yet, with more than 40 years of research showing students typically score lower on standardized tests at the end of summer vacation than they do on the same tests at the beginning of the summer, there are not many solutions in place to deal with this summer slide (Cooper et al., 1996; Downey, von Hippel, & Broh, 2004; Entwisle & Alexander, 1992; Heyns, 1978). School all year around, with no summer breaks, is one phenonmenon that many educators believe could help solve this summer slide. However, this has gained little traction among educators and parents alike. Individual non-profits, city library programs, summer reading campaigns, and individual districts, schools, and even teachers do their best to promote reading during the summer by offering summer programs and trying to get books to kids, but the summer slide is still occurring and children are still struggling to read.

More than half of the achievement gap between lower- and higher-income youth may be explained by unequal access to summer learning opportunities. Students from lower-socioeconomic status lose 2 months of reading achievement over the summer months while those from more advantage homes gain a month during the summer

(Cooper et al., 1996). Students with disabilities and ELL's may have even more loss over the summer months. Many children in the United States are struggling to read with fluency, which then affects their comprehension and overall academic achievement. This loss of learning over the summer months can leave educators feeling frustrated (Cahill et al., 2013). More importanly, it can leave children illiterate, struggling, and less likely to succeed in school and in life.

If children are reading closed captioning on television during the summer, perhaps this could prevent this "summer slide" and possibly even boost their reading skills, particularly their oral reading fluency (ORF) scores. It is known that children need time spent reading and that books in the home are an essential part of this, but it is hard to achieve when there is only one book per 300 children living below the poverty line (Neuman & Celano, 2001). We must begin to think outside of the box to generate and examine alternatives where print can be found through other devices like closed captioning and subtitling on TV, which is in almost every home in our nation.

The purpose of the study was to discover if closed captioning and same-language subtitling on TV and/or movies could be used as a supplementary tool in the home during the summer months to prevent the summer slide in reading, particularly in reading oral fluency. This chapter discusses the findings in this study. First, each research question is addressed. Next, relevance to theoretical frameworks is discussed. Then the strengths and limitations of this study are presented. Finally, implications for practice and future research are noted.

Research Question 1

The first research question in this study focuses on the extent to which using closed captioning and same-language subtitling on television in the home during the summer increases a child's oral reading fluency. Although the results of the ANOVA comparing the mean oral fluency score of the treatment group and the control group found no statistical significance, this may have been due to small sample size of $n = 30$ (specifically $n = 15$ in each of the two conditions, treatment and control). However, results showed that more students in the treatment group did not slide, but gained in reading oral fluency over the summer. This may prove important. There were 10 students in the treatment group compared to six students in the control group that increased their reading achievement over the summer. Only five children in the treatment group slid, while nine in the control group slid. The end-of-the-year first grade mean score of the treatment group was 83.13 or 83 words per minute, while the end-of-the-year first grade mean score for the control group was 98 words per minute. The control group was reading 15 words per minute faster than the treatment group at the end of first grade. However, the students who used closed captioning and same language subtitling on television increased their oral fluency from 83.13 or 83 to 88.93 or 89 words per minute when past research suggests that they should have slid. The treatment group increased their oral reading fluency by six words per minute over the summer. The control group had a mean score of 98 words per minutes at the end of first grade, but at the beginning of second grade the mean score was only 98.93 or 99, a gain of only one word per minute throughout the summer. Although the control group did not slide as a whole, they did not

gain as much as the treatment group who that had watched closed captioning and same language subtitling over the summer.

When comparing the characteristics of the two groups revealed from results of the PPSCHR, the use of closed captioning and same language subtitling as a tool to be used in the home during the summer months becomes even more compelling. Although, the treatment and the control groups were discovered to have about the same number of books in the home, were read aloud to by their parents the same amount, and the similar socioeconomic status, there were many important differences that may have affected the results of this study. These are elaborated below.

First, the treatment group had three children with disabilities compared with only one in the control group. The treatment group also had four ELLs compared with only one in the control group. The treatment group was more racially diverse, whereas the control group was predominantly White. The treatment group also had nearly the same number of girls and boys, whereas the control group had predominantly girls. This may be important to understanding the mean scores. The treatment group was quite heterogeneous, while the control group was quite homogeneous. In most cases, one would suspect a group with more children with disabilities, more ELLs, and more racial diversity not to outperform a group that had less children with disabilities, ELLs, more Caucasians, and more girls—especially in the younger years when girls are known to develop on average at a higher rate than boys in early language skills (Reznick & Goldfield, 1992). And yet, the treatment group did indeed outperform the control group in terms of gains in reading words per minute as measured by the pretest-posttest DIBELS achievement assessment.

According to the information in Table 20, five of the six students in the control group who attended the Keller Reading Program still slid over the summer in their oral reading fluency. Although not by much, four students slid by -3, -2, -2, -5 words per minute (wpm), and one student slid by -23 words per minute. These students may have slid even more if they had not been involved in this summer reading program, which means this program may have affected the mean of the control group and therefore the statistical significance of comparisons in this study.

Some other interesting observations are that the treatment group on average had more TVs in the home than the control and watched a half hour a day more of television than the control group, yet the children in the treatment group still increased their scores more than the children in the control group. While research tells us children who watch more television often have lower reading scores, this was not the case with the children in this treatment group. Possibly this was because the children in the treatment group were "reading TV" and not watching it. The children in the treatment group also read more independently by themselves daily as reported by their parents. One could say this was the major significant variable in that condition, but interestingly this group also had more TVs, watched more TV, and read more independently on their own in the summer, suggesting that the act of "reading" TV verses watching TV may have motivated the children in the treatment group to read books and other print.

It also must not be forgotten that nine of the 15 parents in the control group felt that using closed captioning and subtitling on television helped their child become a better reader throughout the summer. From the comments shared with the researcher, parents appreciated using this tool during the summer and many believed it helped their

child become even more motivated and excited about reading as well as helped the younger siblings in the household to be better readers. Most of them shared they would continue to use this tool in their home as a supplementary literacy tool to increase their child's reading fluency.

Research Question 2

The second research question focused on the extent to which using closed captioning and same-language subtitling on screen in the home during the summer prevents a decrease in reading achievement known as the "summer slide." With only six of 15 students sliding in the treatment group, this may suggest that students who watched closed captioning during the summer had less chance of sliding compared to the control group where 10 out of 15 slid. However, a larger sample size would give a better answer to this question.

One must also pay attention to the effect size and the implications that this could have for practice. The effect size is a measure that allows one to judge the relative importance of a treatment by showing the magnitude of gain between treatment and control conditions in comparison studies (Cronk, 2012). The effect size in this case was .32, which means that CC and subtitling on television that is a no cost, easy to use tool in the home, found in most households in the United States, could positively affect more than 32% of children if used to help prevent the summer slide. In other words, extrapolating the effect size results of this dissertation study, if there are 100,000 first graders, just by using closed captioning and subtitling over the summer, 35,000 may increase their oral reading fluency scores by five words per minute on average. This effect size implication is an important finding in this study.

Relevance of Results to Theoretical Frameworks

Traveling Lens Theory

The *traveling lens theory* suggested that if print is too difficult or too easy, the reader will ignore it; however, when print content is of interest and cognitively challenging, the reader will adhere to it (Linebarger et al., 2004). This theoretical framework was confirmed once again by the results of this study. The parent responses suggest "reading TV" was an activity the children enjoyed and motivated them to read other reading materials. The treatment group who watched closed captioning and subtitling over the summer made gains overall in the area of oral reading fluency and read more over the summer despite the fact that they watched a half hour more of television a day compared to the control group during the summer.

Krashen's Theory of Second-Language Acquisition

Krashen's *theory of second-language acquisition* focuses on the idea that basic competence in the second language (L2) is a function of the amount of *comprehensible input* acquirers receive and understand as well the degree to which they are provided with motivation to learn (Neuman & Koskinen, 1992). Past studies have shown that ELL children can benefit by watching closed captioning and subtitling on TV and this study also corroborated this theory, as the treatment group had four ELL students compared to only one in the control group and the treatment group still made greater gains in reading words per minute compared to the control group according to the mean scores.

Dual Coding Theory

The *dual coding theory* suggests that when two modalities (i.e., audio and visual content) are used in presenting information, one modality is usually chosen over the other

or there is a switch between the two. This increases learning without overwhelming the learner (Linebarger et al., 2010). This theoretical framework was once again disconfirmed here as students in the treatment group who watched closed captioning and subtitling in the summer months gained more in oral reading fluency scores compared to those students who did not watch TV using CC or subtitling. The finding that 9 of the 15 parents in the treatment group felt that it did affect their child's reading positively while 6 weren't sure, suggests that the parents were also observing areas of growth in reading or attitudes about reading that were not asked on the survey. Treatment parents' comments also suggested that their students were asking about words on the screen, wanting to know more about the topic, and even enjoying "reading" TV.

Strengths and Limitations

Strengths

The strengths in this study were:

1. This was the first study conducted on this topic in the home environment in the United States.
2. This was the first study on the topic of using CC and subtitling to prevent the summer slide.
3. Results from this study overall corroborated other findings in previous research.
4. The quasi-experimental design allowed for comparisons between treatment and control conditions.
5. Sound research methodology was used, although a randomized control design would have been even stronger.

6. This study included participants from an unstudied population for this topic, namely participants were situated in the Pacific Northwest of the United States.
7. The DIBELS assessment was a valid and reliable measure, widely used in schools/districts across the United States to determine reading achievement, and was administered according to protocol by the regular classroom teachers as required by the school district. No reliability and validity data
8. Data from DIBELS were calculated and reported according to normal school district procedures and original de-identified score reports were provided to the researcher by the principals of the school.
9. The PPSCHR, although a newly developed questionnaire for this study, was vetted and piloted.
10. The PPSCHR instrument accounted for many outside variables that may have affected the dependent variable.
11. Multiple measures were used, including a survey and tests.
12. Measures aligned with the types of research questions that guided the studies.
13. Results added new information to the topic of concern and further developed the field of knowledge on the topic.

Limitations

The limitations in this study were:

1. The sample size was small which makes generalizability more tentative.
2. The study did not yield significant results, most probably due to the small sample.
3. The study examined only oral reading fluency scores, which are only one part of reading.

4. The groups compared were somewhat unlike demographically, although alike on some characteristics.
5. It was a volunteer study so already the sample could have been parents who were already knowledgeable about helping their child in reading and eager to help their children in reading.
6. The sample did not end up being as true to the low socioeconomic representation as hoped.
7. The two groups were not as alike in reading scores at the beginning of the study as hoped.
8. The PPSCHR instrument was self- report so may have been susceptible to social desirability responding, as is true on all self-report measures.

Implications for Practice

Parents and educators alike may be interested in using CC and subtitling on TV as a tool in the home to prevent the summer slide. Although more studies need to be administered in the home with larger sample sizes for generalizability, there is hope that this could be a tool to empower both parents and educators to help prevent the summer slide in reading—especially given the huge need to prevent the summer slide from occurring in reading for children across the country. Educators may now tell the parents of their families about this no cost and easy tool to use that is already available in their home so that children could be reading television over the summer rather than watching it. Educators try to do so much by encouraging summer school, getting books to kids at the end of the school year, teaching and planning summer reading programs themselves, all to help solve this problem. This supplementary reading tool in the home could be an

additional resource and a simple tip to empower educators. Educators who promote this may find that the tool could have an effect on a great deal of children over the summer so that educators would not be playing catch up.

Parents on the other hand try to enroll their children in all these special summer programs and in the end maybe this added practice gained while watching TV daily in the summer would actually provide this reading practice. Some families cannot afford extra services in the summer and hundreds of books in the home, so this may prove effective for many families. It may help teach all sorts of children to read and it may even add more joy to the lives of children. In this study, the children who watched TV with captioning and subtitling also read more on a daily basis throughout the summer. This implies that possibly reading TV could also motivate kids to read books.

The information from this study may also lend itself to non-profit agencies and public agencies working with children and families specifically in the area of literacy. Cable companies that want to attract families/parents may look at these findings as a marketing tool as well as a literacy tool. By adding words to their regular programming automatically, known as open captioning (and not having parents have to figure out the access to closed captioning), programs may attract a larger audience of viewers to their channels. They also may attract those from the Deaf community or those who have hearing impairments, thus increasing their audience and profits. Streaming companies as well that want to build their audience may want to look into offering *open captioning*, where words automatically appear on the screen. Internet companies, who currently are not adhering to the closed captioning rule may be forced to add captions to websites.

Although these results show promise for the future, they also must be approached with caution. As stated previously, the sample in this study was small and there were other issues that could not be controlled. For example, there was evidence that the treatment and control groups were not exactly identical on all demographic characteristics, making it possible that differences in measures between these two groups could have been influenced by such factors.

Implications for Future Research

There are many implications for future research. It is safe to assume this same study administered with a larger sample size would yield statistically significant results which would add even more evidence to the body of research that closed captioning and subtitling may be a useful supplementary literacy tool in the home to increase reading achievement. The findings of this research also suggest that children with disabilities and English language learners may also benefit from this tool to help increase their oral reading fluency. Since this is the first study ever conducted in the home in the United States, future studies administered in the home with observation as well as exact documented times of reading and television viewing would possibly be more accurate and not rely solely on self-report data. Another study conducted with groups more equivalent demographically from the start would also be more compelling and also perhaps be more likely to yield statistical significance if the treatment is the factor influencing increased reading achievement.

It would also be interesting to discover if the closed captioning was motivating students to read more books and if so, why that occurred. Did the words on TV make children realize that words are everywhere, get them excited about a topic, help them

become better so they were able to read harder material more joyful? If students are "reading" TV, are the other harmful effects of TV often noted in the literature still occurring for the child? The answers to these questions would be interesting to explore, plus interviewing children themselves may yield important information to assist everyone in better understanding reading motivation.

Other studies may look at certain children with reading disabilities, ADHD, or identified as talented and gifted. This dissertation study showed that children in the treatment group gained in reading words per minute over the summer in which they watched closed captioning and subtitling, which means exploring this intervention with all types of children may be beneficial for educators, parents, and students working toward increased achievement in reading.

Summary

This study may add to the body of research on the use of closed captioning and same-language subtitling as a literacy tool to increase reading achievement. It also may allow leaders in the home, in school, in research, in non-profits, in the world of entertainment, even in public policy, to look at this as a way to help prevent the summer slide that is contributing to the opportunity or achievement gap. Since, this study was the first one conducted in the home in the United States, there is much more research needed with larger sample sizes to add to the body of research devoted to better understanding how this tool could help to build readers and prevent the summer slide. However, with the growing number of English Language Learners and the fact that screens are not going away but becoming even more prevalent, why not add words to screens? If children are watching TV in the summer, they might as well be reading it, with the potential to

increase their oral reading fluency. According to author E. B. White, television, once thought an unbearable disturbance of the general peace, may actually become many children's saving radiance in the sky, by teaching them how to read and preventing the summer slide.

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APPENDIX A

Site Permissions

On Jan 17, 2014, at 4:42 PM, "Manobianco, Matt" <MManobianco@lwsd.org> wrote:

Hi Joy,

Thanks for your patience in waiting for a reply. Since this e-mail, I spoke with a Director who oversees access to student information as well.

I agree that your research request is unusual in that this is really not happening during the school year or school day, and instead during summer. The school principal doesn't need to give permission for your summer research study, but it would be important for the principal to know what you are doing and agree that you are doing it.

Here is what I see as next steps:

- If you have Title Schools in mind, let me know the names so that I can contact the principals ahead of time to let them know that you will be contacting them
- Prepare a letter that will go home to parents of students you would like to have consider to be in your study. I would like to see that letter first before you show it to the principal. We have a disclaimer we will add to the bottom of the letter that indicates to parents that this study is being done by you as a doctoral student and not by the school district. The principal could suggest changes to your letter as well.
- This letter should contain all the pertinent information about your study, including who you are (doctoral student, former LWSD teacher, etc.), purpose of the study, all details of what you want parents and students to do and how you want them to communicate directly with you.
- This letter should have a permission section for the parent name and signature(s).

I look forward to hearing the names of schools from you so I can contact the principals.

Thanks,

Matt

Assistant Superintendent Lake Washington School District

APPENDIX B

Institutional Review Board Approval

June 6, 2014

Joy Brooke
EDLR, Loyola 314
Seattle University

Re: Protocol # FY2014-17

Dear Joy,

Your revised protocol entitled **FY2014-17: "Preventing the Summer Slump: Using Closed Captioning and Same Language Subtitling as a Literacy Tool in the Home to Increase Reading Achievement in the Summer"** has been reviewed and it is determined that you have made all the required changes.

The protocol has been issued a two-year flexed approval for the period **June 6, 2014 to June 5, 2016**. You may go ahead and begin your study.

If your study continues beyond the approval period or ends before, please submit a Continuing Review Application or a Closeout Study form to the IRB at least one week prior to June 5, 2016. (Always visit our website to download the most recent forms: www.seattleu.edu/irb. Or, if you have concluded data collection and will be working on analysis only, you may apply for Downgrade to Exempt status. If you wish to make any changes during the course of the study, you will need to submit an IRB Modification Form to request approval of changes. Please bear in mind that no modifications may be made without prior IRB approval.

If you have additional questions or if we can be of further assistance, please don't hesitate to contact the IRB at any time.

Thank you for your time, and best wishes with your research pursuits.

Sincerely,

Andrea Rossing McDowell, PhD
Institutional Review Board Administrator
mcdowela@seattleu.edu

cc: Dr. Laurie Stevahn, Faculty Adviser

APPENDIX C

Participant Consent Forms

CONSENT TO PARTICIPATE IN RESEARCH

TITLE: Preventing the Summer Slide in Reading
(Treatment / this label will be removed when administered)

INVESTIGATOR: Joy Brooke, 425-890-8968

ADVISOR: (if applicable) Laurie Stevahn, Education Leadership Department,
Seattle University
(206) 296-2559 and stevahnl@seattleu.edu

PURPOSE: You are being asked to participate in a research project that seeks to investigate **how to increase reading achievement over the summer**. You will be asked to **attend an Information Night on Summer Reading, report your child's Spring and Fall DIBELS reading scores, use closed captioning and same language subtitling on your television in the home during the summer, and answer a short survey on your child's summer reading habits that will take about 10 minutes**.

SOURCE OF SUPPORT: This study is being performed as partial fulfillment of the requirements for the **doctoral** degree in Educational Leadership at Seattle University.

RISKS: There are no known risks associated with this study.

BENEFITS: **There are no known individual benefits, however the findings of this study may add to the body of research to support the prevention of summer reading loss.**

INCENTIVES: **For participating in this study, you will receive 6 children's books, three at the start and three at the end.** Participation in the project will require no monetary cost to you or your child.

CONFIDENTIALITY: You or your child's name will never be used in any public dissemination of these data (publications, presentations, etc.). All research materials and consent forms will be stored **in a locked laptop with a password where only researcher has access to the data**. Human subjects research regulations require that data be kept for a minimum of three (3) years. When the research study ends, all identifying information will be removed from the data, or it will be destroyed. All of the information you provide will be confidential. However, if we learn you intend to harm yourself or others, we must notify the authorities.

_____
Initials/Date

RIGHT TO WITHDRAW: Your participation in this study is *voluntary*. You may withdraw your consent to participate at any time without penalty. Your withdrawal will not influence any other services to which you may be otherwise entitled.

SUMMARY OF RESULTS: A summary of the results of this research will be supplied to you, at no cost, upon request. **425-890-8968 and dearmrs.brooke@gmail.com.**

VOLUNTARY CONSENT: I have read the above statements and understand what is being asked of me. I also understand that my participation is voluntary and that I am free to withdraw my consent at any time, for any reason, without penalty. On these terms, I certify that I am willing to participate in this research project.

I understand that should I have any concerns about my participation in this study, I may call **Joy Brooke**, who is asking me to participate, at **425-890-8968.** If I have any concerns that my rights are being violated, I may contact Dr. Bruce Koch, Chair of the Seattle University Institutional Review Board at (206) 296-5815.

_____ _____

Participant's Signature **Date**

_____ _____

Investigator's Signature **Date**

CONSENT TO PARTICIPATE IN RESEARCH

TITLE: Preventing the Summer Slide in Reading
(Control / this label will be removed when administered)

INVESTIGATOR: Joy Brooke, 425-890-8968

ADVISOR: (if applicable) Laurie Stevahn, Education Leadership Department,
Seattle University
(206) 296-2559 and stevahnl@seattleu.edu

PURPOSE: You are being asked to participate in a research project that seeks to investigate **how to increase reading achievement over the summer**. You will be asked to **attend an Information Night on Summer Reading, report your child's Spring and Fall DIBELS reading scores, and answer a short survey on your child's summer reading habits that will take about 10 minutes to complete.**

SOURCE OF SUPPORT: This study is being performed as partial fulfillment of the requirements for the **doctoral** degree in Educational Leadership at Seattle University.

RISKS: There are no known risks associated with this study.

BENEFITS: **There are no known individual benefits, however the findings of this study may add to the body of research to support the prevention of summer reading loss.**

INCENTIVES: **For participating in this study, you will receive 6 children's books, three at the start and three at the end.** Participation in the project will require no monetary cost to you or your child.

CONFIDENTIALITY: You or your child's name will never be used in any public dissemination of these data (publications, presentations, etc.). All research materials and consent forms will be stored **in a locked laptop with a password where only researcher has access to the data**. Human subjects research regulations require that data be kept for a minimum of three (3) years. When the research study ends, all identifying information will be removed from the data, or it will be destroyed. All of the information you provide will be confidential. However, if we learn you intend to harm yourself or others, we must notify the authorities.

_____
Initials/Date

RIGHT TO WITHDRAW: Your participation in this study is *voluntary*. You may withdraw your consent to participate at any time without penalty. Your withdrawal will not influence any other services to which you may be otherwise entitled.

SUMMARY OF RESULTS: A summary of the results of this research will be supplied to you, at no cost, upon request. **425-890-8968 and dearmrs.brooke@gmail.com.**

VOLUNTARY CONSENT: I have read the above statements and understand what is being asked of me. I also understand that my participation is voluntary and that I am free to withdraw my consent at any time, for any reason, without penalty. On these terms, I certify that I am willing to participate in this research project.

I understand that should I have any concerns about my participation in this study, I may call **Joy Brooke**, who is asking me to participate, at **425-890-8968.** If I have any concerns that my rights are being violated, I may contact Dr. Bruce Koch, Chair of the Seattle University Institutional Review Board at (206) 296-5815.

_____ _____

Participant's Signature **Date**

_____ _____

Investigator's Signature **Date**

CONSENT TO PARTICIPATE IN RESEARCH

TITLE:	**Pilot Study:** Preventing the Summer Slide in Reading (Pilot)
INVESTIGATOR:	Joy Brooke, 425-890-8968
ADVISOR: (if applicable)	Laurie Stevahn, Education Leadership Department, Seattle University (206) 296-2559 and stevahnl@seattleu.edu
PURPOSE:	You are being asked to participate in a pilot research project that seeks to investigate **how to increase reading achievement over the summer**. You will be asked to take a short Post Parent Reading Survey on your child's reading habits over the summer, then provide feedback on how this instrument might be improved for clarity and content. Total time will take 10 minutes.
SOURCE OF SUPPORT:	This study is being performed as partial fulfillment of the requirements for the **doctoral** degree in Educational Leadership at Seattle University.
RISKS:	There are no known risks associated with this study.
BENEFITS:	**There are no known individual benefits, however the findings of this study may add to the body of research to support the prevention of summer reading loss.**
INCENTIVES:	Participation in this pilot project will require no monetary cost to you or your child.
CONFIDENTIALITY:	Your name will never be used in any public dissemination of these data (publications, presentations, etc.). All pilot research materials and consent forms will be stored **in a locked laptop with a password where only researcher has access to the data**. Human subjects research regulations require that data be kept for a minimum of three (3) years. When the pilot research study ends, all identifying information will be removed from the data, or it will be destroyed. All of the information you provide will be confidential. However, if we learn you intend to harm yourself or others, we must notify the authorities.

_____

Initials/Date

RIGHT TO WITHDRAW: Your participation in this pilot study is *voluntary*. You may withdraw your consent to participate at any time without penalty. Your withdrawal will not influence any other services to which you may be otherwise entitled.

SUMMARY OF RESULTS: A summary of the results of the final research study that will be conducted in the future and that will use the final revised survey that you are being asked to pilot will be supplied to you, at no cost, upon request. **425-890-8968 and dearmrs.brooke@gmail.com.**

VOLUNTARY CONSENT: I have read the above statements and understand what is being asked of me. I also understand that my participation is voluntary and that I am free to withdraw my consent at any time, for any reason, without penalty. On these terms, I certify that I am willing to participate in this pilot research project.

I understand that should I have any concerns about my participation in this study, I may call **Joy Brooke**, who is asking me to participate, at **425-890-8968.** If I have any concerns that my rights are being violated, I may contact Dr. Bruce Koch, Chair of the Seattle University Institutional Review Board at (206) 296-5815.

_____ _____

Participant's Signature **Date**

_____ _____

Investigator's Signature **Date**

APPENDIX D

Post Parent Survey on Child's Home Reading (PPSCHR) Survey

Post Parent Survey on Child's Home Reading (PPSCHR) Survey

1. How many books are available for your child to read in your home?

_____

2. How many TVs are in your home?

_____

3. Does your child have a TV in his/her bedroom?

❑Yes

❑No

4. Did your child take part in any educational camps/programs this summer?

❑Yes

❑No

If yes, what was the name of the program/s?

5. How many minutes did your child spend reading print (in a book, a newspaper, comics, etc.) by themselves each day this past summer?
If you're not sure, make your best guess.

_____hour/s_____minutes

6. How many minutes did you read aloud to your child each day this past summer?
If you're not sure make your best guess.

_____hour/s_____minutes

7. How many minutes did your child watch *TV each day this past summer?
If you're not sure make your best guess.

_____hour/s_____minutes
*TV meaning regular television programming on cable channels or movies on DVD

8. What percentage of total television time that your child watched this summer used words (closed captioning or subtitling in English)?

_____%

9. If your child watched television with closed captioning and/or subtitles in English, do you feel it helped him/her to become a better reader?

❑Yes

❑No

❑Not sure

❑Not applicable, as my child did not watch television with closed captioning and/or subtitles.

10. Before this past summer did your child ever watch television with words on the screen (closed captioning or subtitling in English)?

❑No

❑Yes

If yes, what percentage of total television time that your child watched before this past summer used words on the screen (closed captioning or subtitling in English) ?

_____%

If yes, for how long has your child watched television using words on screens (closed captioning or subtitling in English)?

_____months _____years

11. Check all that best describes your child.

❑My child has not been identified to have a learning disability.

❑My child has been identified with a learning disability and receives service in the area of reading.

❑My child has been identified with a learning disability and receives service in the area of math.

❑My child has been identified with a learning disability and receives service in the area of writing.

❑My child has been identified as an English Language Learner (ELL) receives services in English.

❑My child has been identified as talented and gifted.

❑My child has been diagnosed with ADHD.

❑My child has been diagnosed with ADD.

❑My child has been diagnosed with Autism.

❑My child receives special education services for:

❑Other (please specify)

12. What is your child's age?

_____years_____months

13. Is your child a boy or a girl? Check one.

❑ boy

❑ girl

14. Which option below best describes your child's race/ethnicity.

❑Hispanic

❑Pacific Islander

❑Native American

❑Caucasion/White

❑Indian

❑Middle Eastern

❑Other (please specify)

_____

15. Is your child's first language English? Check one.

❑Yes

❑No

Language(s) spoken at home_____

16. What is your approximate average household income?

❑$0-$24,999

❑$25,000-$49,999

❑$50,000-$74,999

❑$75,000-$99,999

❑$100,000-$124,999

❑$125,000-$149,999

❑$150,000-$174,999

❑$175,000-$199,999

❑$200,000 and more

Tell me anything else about this experience you'd like to share or would like me to know.

Parent Name_____ (please print)

Child's Name_____(please print)

*A reminder names will not be shared and all information will be confidential according to the IRB permission slip you signed.

APPENDIX E

Letter to First Grade Teachers

Dear **First Grade Teacher**,

Hi! My name is Joy Brooke and I am a teacher. I am also a doctoral candidate at Seattle University. I am doing a research study on how to prevent the summer slump in reading.

What is the **summer slump**? The summer slump is the loss of learning that occurs when a child is out of school during the summer months. Typically, a child regresses over two months in reading over the summer and sometimes more! As teachers, we know how frustrating this can be!

Your principal has given me the permission to ask you for help in this study. You can help by sending out the attached parent letter to the parents/guardians of your students asking them to join this study.

Once these parents join the study they will be asked to attend an information night/free book fair in June about how to help their child with reading over the summer and receive books for their child. As part of the study, they will also be asked to report their child's Spring first grade DIBELs reading scores and take a short survey about the summer reading behaviors of their children in the fall.

I so appreciate your willingness to help with this study! I am hoping many parents will want to participate. Once again, I appreciate any encouragement you can give to these parents. These findings may help your students and other children prevent the summer slump and become great readers!

Thank you!
Joy Brooke

Joy Brooke is passionate about helping children learn to read. She is a National Board Certified Teacher and former Lake Washington School District K/1/2 teacher. She is currently working on her doctorate of Education Leadership at Seattle University. She is also an Education Consultant, writes a column called "Ask Mrs. Brooke" found in the Kirkland Reporter, an expert blogger for the Committee for Children, and Co-Chair of First Book-Seattle, a non-profit that gives books to kids who need them most. You can learn more about her at www.askmrs.brooke.com and email her at dearmrs.brooke@gmail.com if you have any questions.

APPENDIX F

Letters to Principals of Title 1 Schools

Dear **Principal (Name),**

My name is Joy Brooke. I am a teacher and a doctoral student at Seattle University. I am doing a research study on how to prevent the summer slump in reading.

What is the **summer slump**? The summer slump is the loss of learning that occurs when a child is out of school during the summer months. Typically, a child regresses over two months in reading over the summer and sometimes more. As educators we know how frustrating this can be!

Matt Manabianco, Associate Superintendent, has given me permission to ask you to help with this study. I will be asking parents of first graders at your school to join my study. These parents will be asked to attend an information night to learn about how to help their child in reading over the summer, report their child's Spring first grade DIBELS scores and their child's second grade DIBELS scores to me, and fill out a survey about their child's home reading habits over the summer. All parents who join the study will be given a starter library of 6 books to share with their child.

As principal, you can help by sending the first grade teachers at your school the attached letter from me about this study and encouraging them to send the parent letter about the study home with families of first graders. You can also help by giving me permission to hold an information night/free book fair at your school in June and again in October.

I so appreciate your willingness to assist with this study. These findings may help other parents prevent the summer slump for their children and help their children become great readers!

Thank you!
Joy Brooke

Joy Brooke is passionate about helping children learn to read. She is a National Board Certified Teacher and former Lake Washington School District K/1/2 teacher. She is currently working on her doctorate of Education Leadership at Seattle University. She is also an Education Consultant, writes a column called "Ask Mrs. Brooke" found in the Kirkland Reporter, an expert blogger for the Committee for Children, and Co-Chair of First Book-Seattle, a non-profit that gives books to kids who need them most. You can learn more about her at www.askmrs.brooke.com and email her at dearmrs.brooke@gmail.com if you have any questions.

APPENDIX G

Parent Letters (Treatment and Control)

Dear Parent/Guardian of a **First Grader**,
You and your child are invited to be part of a study on increasing reading achievement over the summer and preventing the summer slump!

What is the summer slump? The summer slump is the loss of learning that occurs when a child is out of school during the summer months. Typically, a child regresses over two months in reading over the summer and sometimes more!

By joining this study you may help your child keep all the skills they learned in reading during the school year and even increase their reading achievement over the summer. And, your child will also receive a home library of **6 brand new books** just for participating!
How do I sign up and be part of this study?
6 Easy Steps:

1)Sign permission at the bottom of this letter and return this to your child's teacher.
2)Ask your child's first grade teacher for a printout report of your child's first grade end of the year Dibels oral reading fluency score.
3)Bring these scores to a **free** information night on Summer Reading by Mrs. Brooke in June to learn about how to help your child increase their reading achievement over the summer and **receive 3 free books for your child.** [redacted]
4)Use a new tool in your home to help your child with reading over the summer.
5)In the fall, ask your child's second grade teacher for a printout report of your child's second grade beginning of the year Dibels oral reading score.
6)Bring these to another **FREE Book FAIR** where you fill out a short parent survey and **receive 3 more books!**

I so appreciate your willingness to be part of this study to help your child! These findings could also help other children prevent the summer slump and become great readers!

Thank you!-Joy Brooke

Joy Brooke is passionate about helping children learn to read. She is a National Board Certified Teacher and former Lake Washington School District K/1/2 teacher. She is currently working on her doctorate of Education Leadership at Seattle University. She is also an Education Consultant, writes a column called "Ask Mrs. Brooke" found in the Kirkland Reporter, an expert blogger for the Committee for Children, and Co-Chair of First Book-Seattle, a non-profit that gives books to kids who need them most. You can learn more about her at www.askmrs.brooke.com and email her at dearmrs.brooke@gmail.com if you have any questions.

>>

Parent/Guardian Name____________________ Child's Name________________________

Signature____________________Email______________________Phone number__________

I am agreeing to participate in this study to help my child become a better reader. By signing up I will do my best to follow and complete the 6 steps above. By signing this I understand that all names and information will be kept confidential.

Parent Letter (Control)

Dear Parent/Guardian of a **First Grader**,
You and your child are invited to be part of a study on increasing reading achievement over the summer and preventing the summer slump!

What is the **summer slump**? The summer slump is the loss of learning that occurs when a child is out of school during the summer months. Typically, a child regresses over two months in reading over the summer and sometimes more!

By joining this study you may help your child keep all the skills they learned in reading during the school year and even increase their reading achievement over the summer. And, your child will also receive a home library of **6 brand new books** just for participating!

How do I sign up and be part of this study?

5 Easy Steps:

1) Sign permission at the bottom of this letter and return this to your child's teacher.
2) Ask your child's first grade teacher for a printout report of your child's first grade end of the year Dibels oral reading fluency score.
3) Bring these scores to a **free** information night on Summer Reading by Mrs. Brooke in June to learn about how to help your child increase their reading achievement over the summer and **receive 3 books for your child. A FREE BOOK FAIR!** [redacted]
4) In the fall, ask your child's second grade teacher for a printout report of your child's second grade beginning of the year Dibels oral reading score.
5) Bring these to another **FREE Book FAIR** where you fill out a short parent survey and **receive 3 more books!**

I so appreciate your willingness to be part of this study to help your child! These findings could also help other children prevent the summer slump and become great readers!

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>>>

Parent/Guardian Name____________________ Child's Name________________________

Signature__________________Email____________________Phone number_________

I am agreeing to participate in this study to help my child become a better reader. By signing up I will do my best to follow and complete the 5 steps above. By signing this I understand that all names and information will be kept confidential.

APPENDIX H

Parent-Child Contract

I _____ promise to do my best and watch television and movies only when they have words on the screen. If there are no words on the screen I will remind the adult I am with that I need to have subtitles or closed captions on at all times because it may help me to be a better reader.

Signed _____ Date_____

APPENDIX I

Caregiver/Parent/Babysitter Information Letter

To Whom it May Concern:

The parent of the child you are watching is taking part in a study about how to prevent the summer slide in reading. Over the summer months, the parent of the child you are watching has promised to use closed captioning and subtitling on the television as a literacy tool in the home. When you are with this child please do your best to make sure words are on the screen at all times so the child is reading TV rather than watching TV. The parent involved in the study will help you access these closed captions or subtitles on movies if there is a problem. Thank you for understanding that the results of this study depend on this child having words on the screen when viewing TV. If you have questions please ask the parent involved in the study.

Thank you so much!

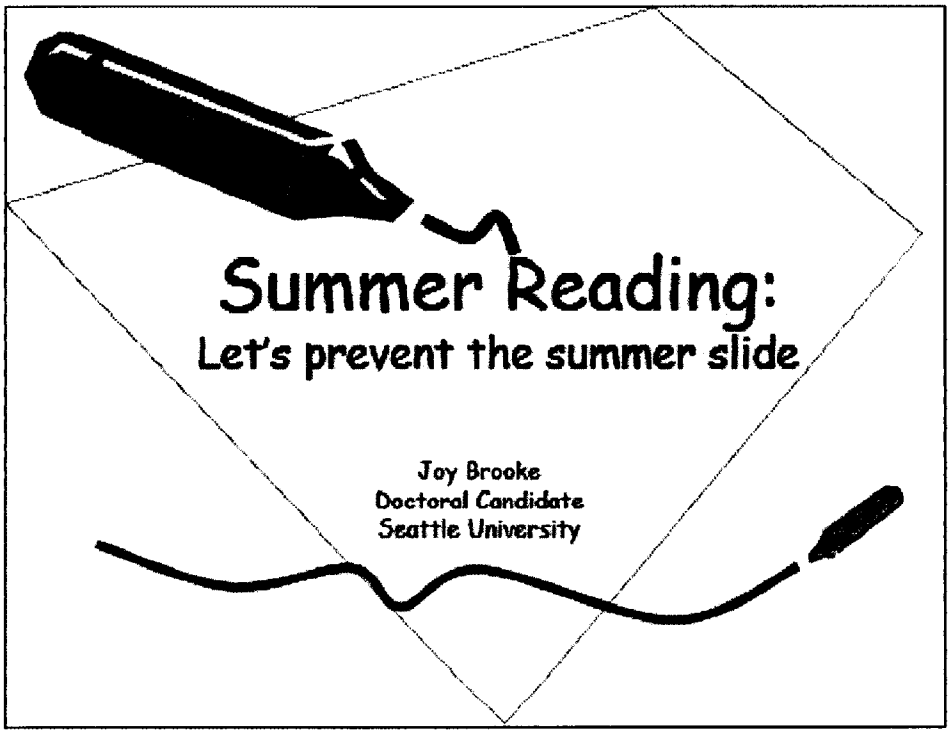
Joy Brooke

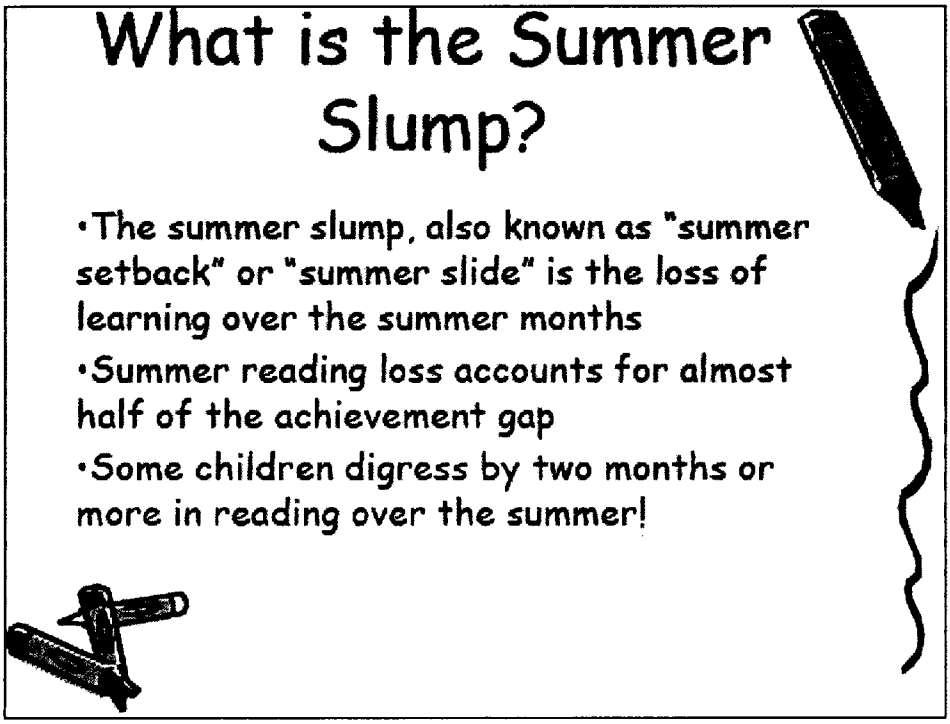
Joy Brooke is passionate about helping children learn to read. She is a National Board Certified Teacher and former Lake Washington School District K/1/2 teacher. She is currently working on her doctorate of Education Leadership at Seattle University. She is also an Education Consultant, writes a column called "Ask Mrs. Brooke" found in the Kirkland Reporter, an expert blogger for the Committee for Children, and Co-Chair of First Book-Seattle, a non-profit that gives books to kids who need them most. You can learn more about her at www.askmrs.brooke.com and email her at dearmrs.brooke@gmail.com if you have any questions.

APPENDIX J

Presentation for the Prevent the Summer Slide Information Night

(Control and Treatment)


Summer Reading:
Let's prevent the summer slide
Joy Brooke
Doctoral Candidate
Seattle University

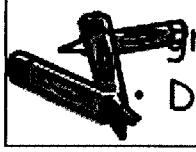

What is the Summer Slump?
•The summer slump, also known as "summer setback" or "summer slide" is the loss of learning over the summer months
•Summer reading loss accounts for almost half of the achievement gap
•Some children digress by two months or more in reading over the summer!

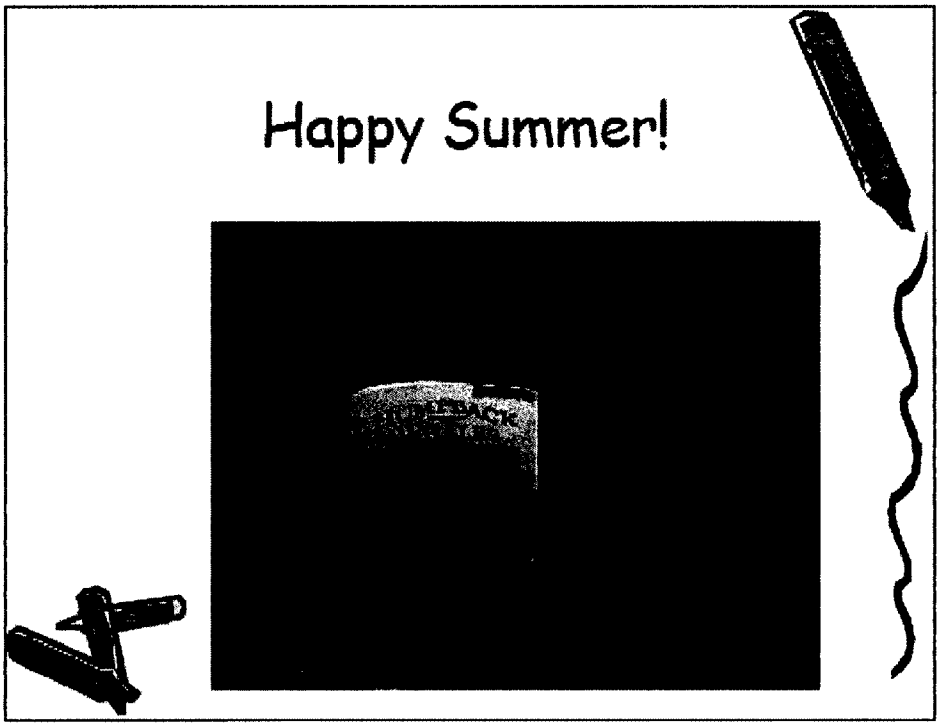
What can you do to help?

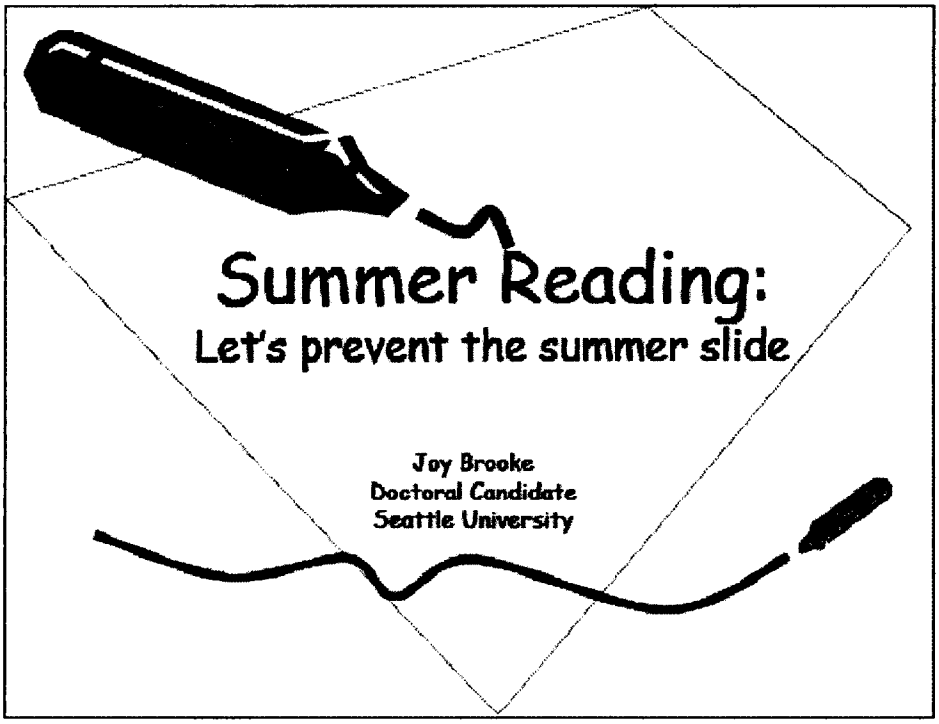
- Visit the library
- Help provide books that interest your child and are at their level
- Provide a print rich home
- Model reading
- Read Aloud
- Encourage reading times in home

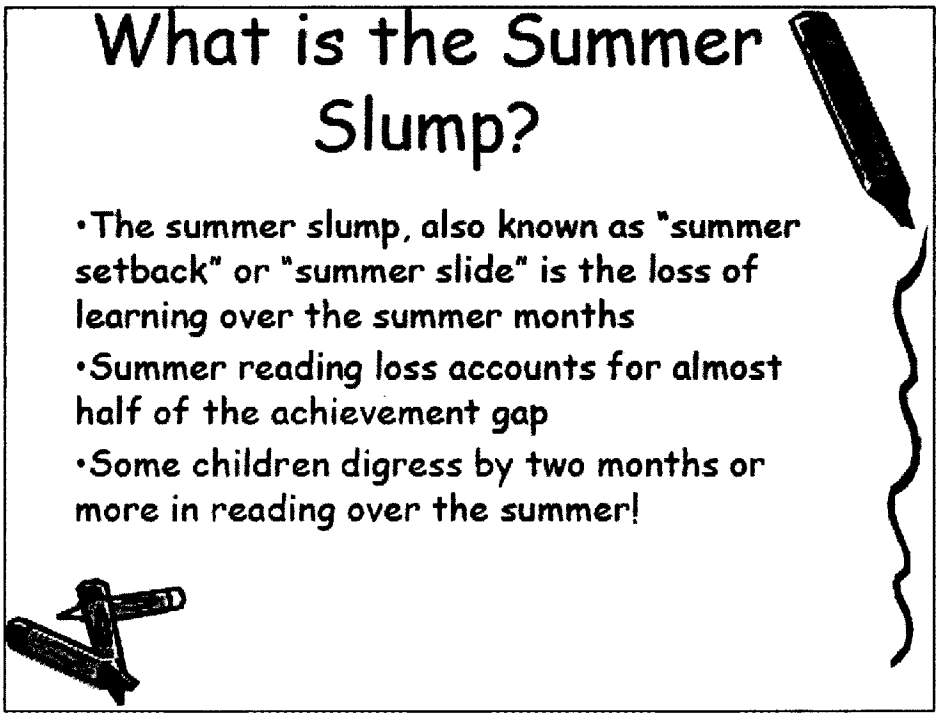
For Joining this Study

- Thank you so much!
- Remember to turn in your child's Spring DIBELS reading scores
- Choose 3 books for your child to take home and keep from the FREE BOOK FAIR!
- Remember to come back in fall for Free BOOK FAIR with Fall second grade reading Dibels Scores
- Do survey on reading and TV habits!




Happy Summer!


Summer Reading:
Let's prevent the summer slide
Joy Brooke
Doctoral Candidate
Seattle University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What can you do to help?

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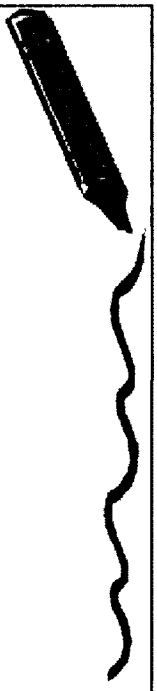
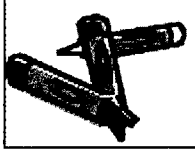
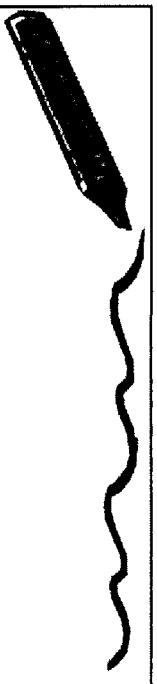
- Provide a print rich home
- Model reading
- Read Aloud
- Encourage reading times in home

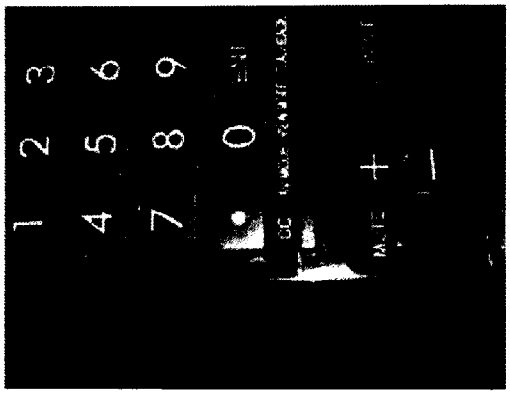


- Provide words on screen when your child watches TV. Yes, closed captioning and same language subtitling!





What if every child was given an opportunity to learn to read with a simple, free, click of a button on the remote?



What if 99% of us have an E-Reader in our homes right now?

- What if when your kids were "watching" TV over the summer, they were actually "reading" TV? Would this prevent the summer slide? Could it even increase their reading achievement?

How to Access CC...

- Cable Network Providers in our Area
  - Comcast
  - Dish Network
- Streaming from TV
  - Netflix, Vudu, Hulu, Amazon Instant Video

COMCAST

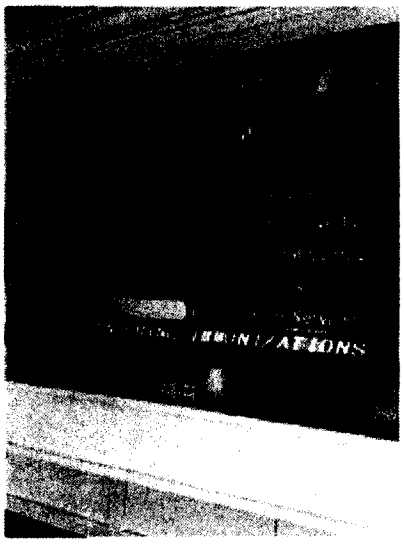
Depends on cable box

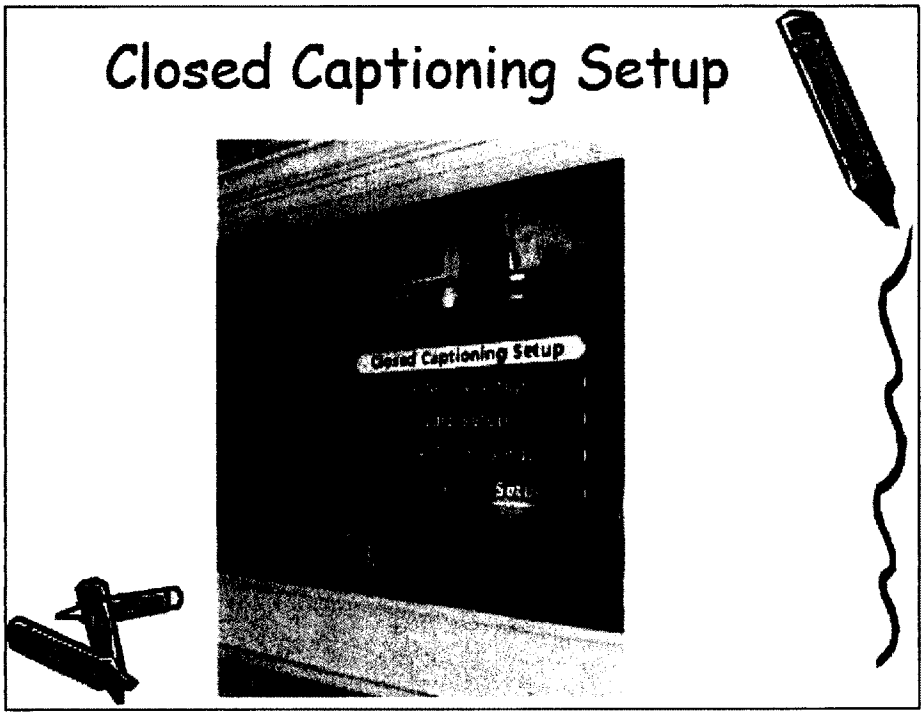
- Try first: 1) Turn off cable box (keep T on) 2)Touch menu on cable box or comcast remote- select closed captioning on

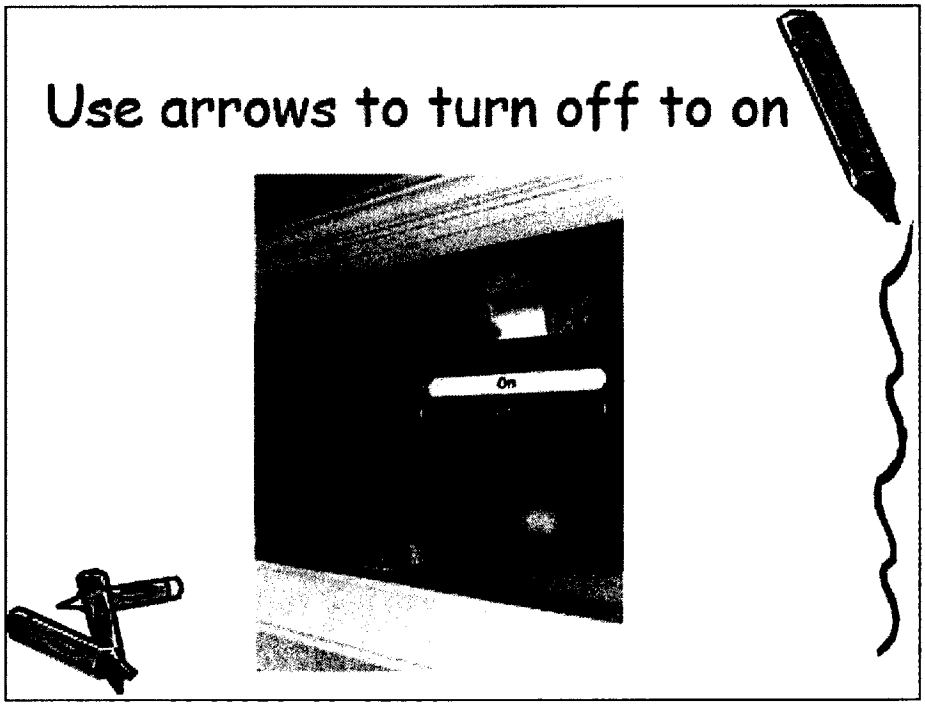
OR

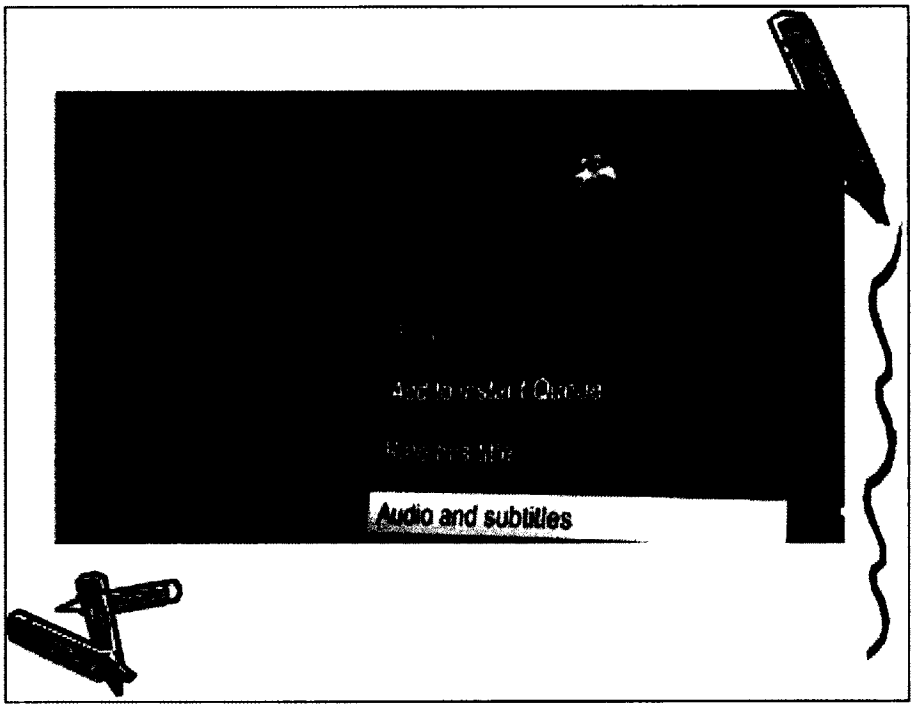
- Push menu, set up, closed captioning setup, turn off to on
- If that doesn't work watch this video!
  - http://www.youtube.com/watch?v=1-Oq2QoD8As

Main Menu then Setup




Closed Captioning Setup


Use arrows to turn off to on
On



Amazon Instant Video

- On every movie streamed through Amazon Instant video you should be able to access closed captioning

Click on lower right CC

Helplines:

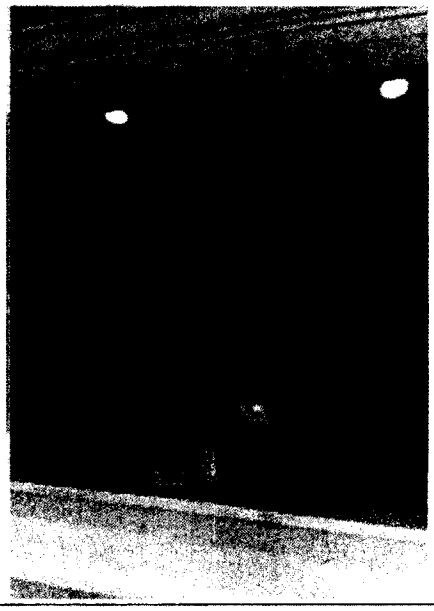
- Comcast: call 1-800-266-2278http://customer.comcast.com/help-and-support/cable-tv/turning-closed-captioning-on-or-off/
- Dish Network: call 888-809-1143
- http://www.mydish.com/support/closed-caption?WT.svl=gsearch_results
- Netflix: call 1-800-585-7265
- https://help.netflix.com/article/en/node/372?bc=GSButtonClick&q=closed%20caption
- Amazon: call 206-765-3049
- https://www.amazon.com/gp/help/customer/display.html?nodeId=201112470

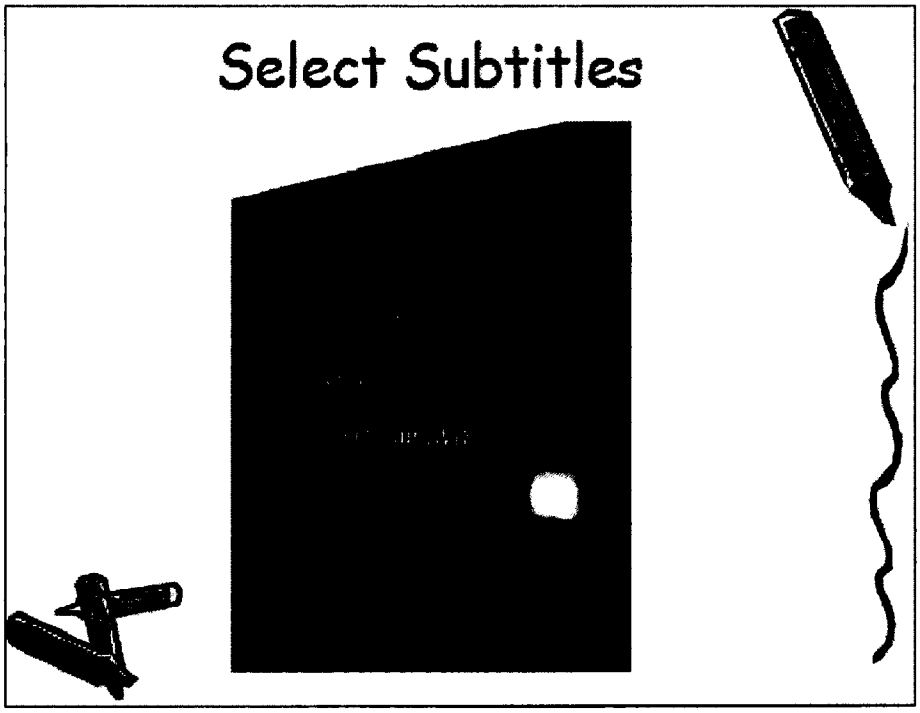
How to Access Same Language Subtitling using a DVD

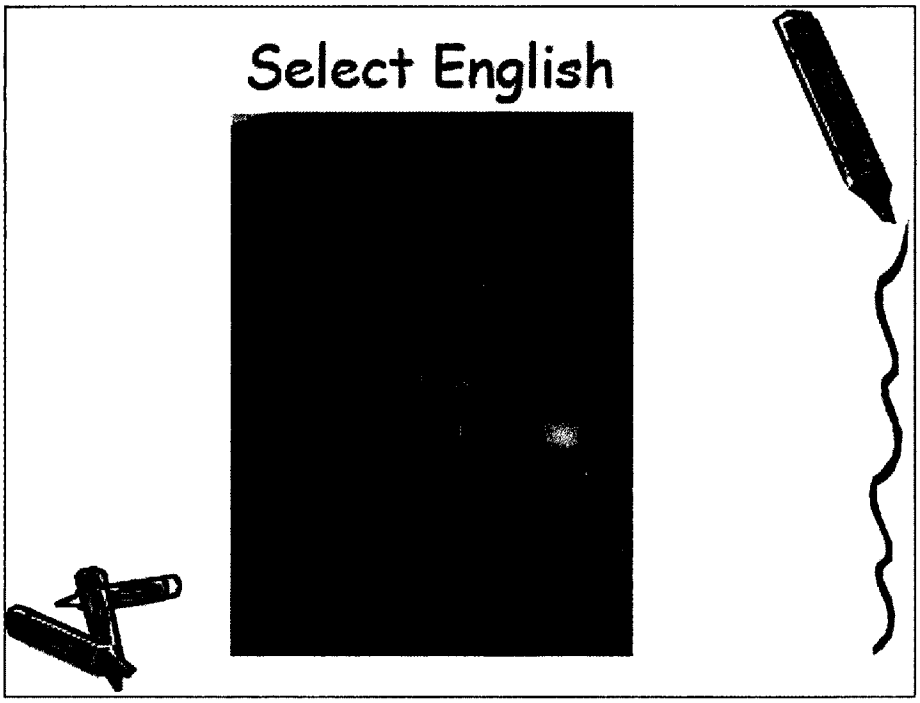
- Home DVD Player, Laptop, Car DVD Player

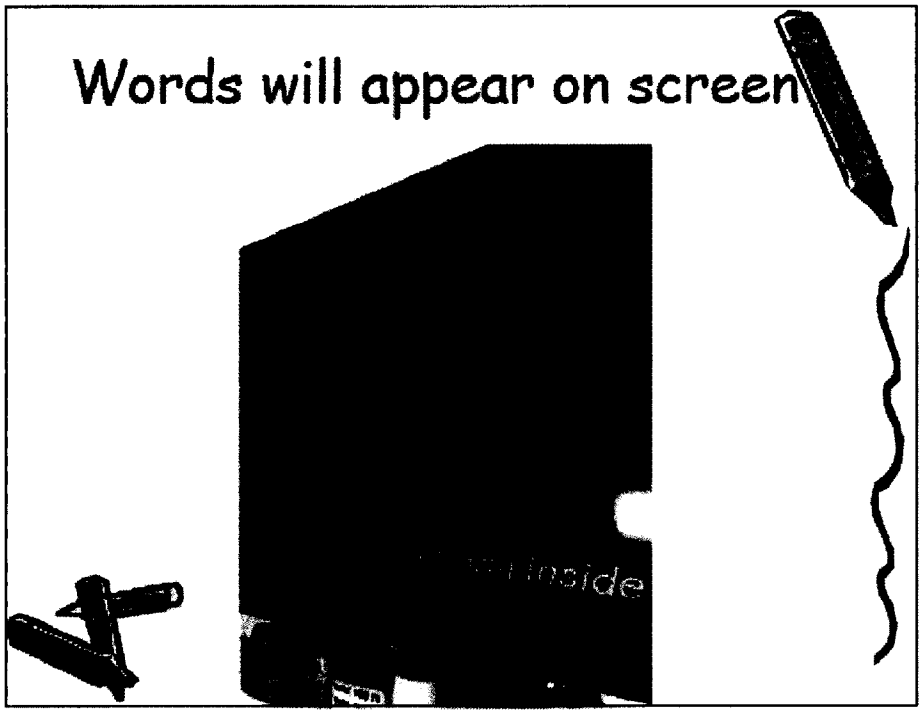
On any device- it shouldn't matter. Most DVD's made after 1990 have English subtitling under SET UP or Languages

Disc Menu to Set Up




Select Subtitles

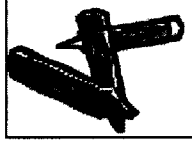

Select English


Words will appear on screen

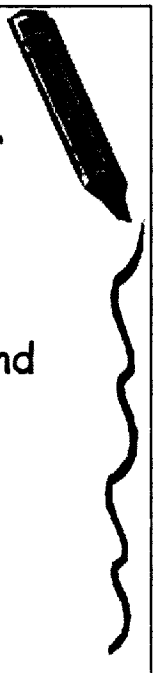

Summer Travel
• Airplanes? Ask flight attendant for CC if you do not use a portable player or laptop
• Cars? Car DVD Player- same as DVD
• Trains? Car DVD Player or laptop
• Hotel? Should come up automatically, if not as front desk
• Rental home? If use DVD' s same instructions, if cable TV try to find out cable company and access

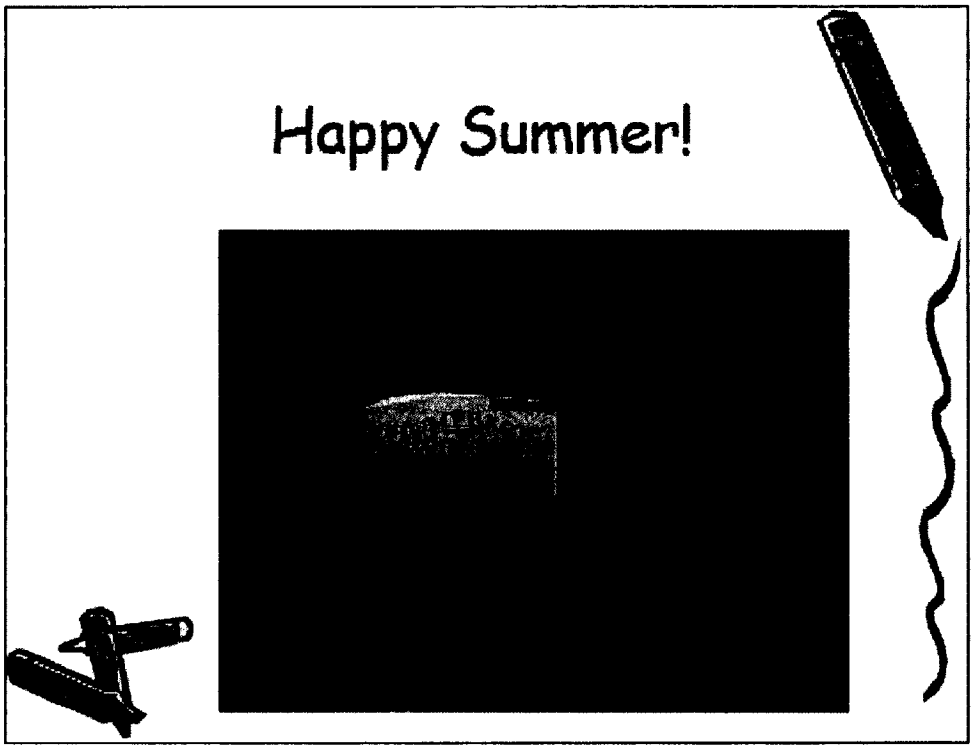
For Joining this Study

- Thank you so much!
- Remember to turn in your child's Spring DIBELS reading scores
- Choose 3 books for your child to take home and keep from the FREE BOOK FAIR!



- Remember to come back in fall for Free BOOK FAIR with Fall second grade reading Dibels Scores
- Get 3 more books for FREE!
- Do survey on time spent reading and time spent viewing TV!




Happy Summer!

APPENDIX K

Survey Item 17 Results

Table K1

Survey Item 17: Open-Ended Comments Shared by Parents

Treatment	Control
Amazon is very good with closed captions. Once you enable them they stay turned on for other movies until disabled. (#19) 117-128*	Thank you for offering this to my daughter. (#1) 23-35*
I'm so sorry! My husband didn't want the CC on our TV in the bedroom, so when in our room she never used CC. In the living room, we had CC on, but after the kids and I were out of town for a week, we came home and CC was turned off. I failed to even notice until a month or more later. I'm so sorry! (#20) 141-95	She is an avid reader and very focused when reading. She may often read above her level, but then may not do so well with comprehension questions. I think she does well at her reading level and loves books. (#3) 160-157
I can definitely see a difference in using CC in my second grader, but also my kindergartner. Because of my son's participation in this study, my daughter was also exposed to CC when watching TV and is already reading the first month into kindergarten! (#21) 151-159*	We usually read every night before bed, but then I also had them read to me each morning during our "school work" time. (#7) 49-59*
First of all, I want to thank you for sharing all the valuable information with us, and the books. We watch TV with caption on and sometimes I read that to her, she likes it and tries reading words back to me. I think overall she read few words by herself because caption draws her attention. My child likes reading. She is in a habit of reading every night but most of the time by herself. I ask her about her books and she tries to tell me the story. I did not spend every night reading to her but when I did we finished the book and talk about it trying to remember names and events. She is going to start reading before school soon. (#22) 34-71*	We participate in this program and the summer reading program at Keller. I appreciate the motivation to read more. She is a strong reader and I think this program helped her retain her skills. (#9) 143-120

I think what helped him was working with the SLP all summer, finding books that did not overwhelm him, ex. loves Calvin and Hobbs, Garfield and being able to match the word with the conversation of the movies or shows that he might otherwise have skipped over because they were hard for him. Thanks! (#23) 117-113

Available books are effectively infinite. We make frequent trips to the King County Public Library. We frequently have audio books on when we drive in the car. (#13) 131-143*

He enjoyed having the subtitles on. He commented a couple of times on how he read the words (some) that they were saying. We'll keep them on, going forward as well. (#25) 29-30*

I typically read two books (short books; or 1-2 chapters from a chapter book) each evening with my 7-year-old and 4- year-old daughters. So, my 7-year-old gets this, in addition to reading time she gets at school and after-school care. #14 71-87*

Having closed captioning on during DVDs and programs he'd seen without CC made him watch more intently—it spurred questions not only about larger words he didn't have in his vocabulary, but also discussion on topics of foreign languages, modestly, culture, technology, character motivation, etc. He no longer just sat as a passive recipient. He found new interests and started asking for library books in not just topic areas but genres that interested him. We had CC on before to watch "House" after bedtime (without screams waking scaring children) and just were too lazy to turn it off sometimes. But now we will be keeping it on and recommending it to other parents. (#27) 105-109*

Reading is important in our house. I wish there were more resources out there to help match reading and interest level. #18 148-156*

Sometimes we had a difficult time with the closed captioning. The words would show on the screen either before or after the audio and sometimes the written words were completely different compared to the audio. The movie subtitles worked best (the audio and words were more in sync). My daughter was in a special reading group in first grade. This year her test scores were high enough that she no longer needs the special reading help. Her reading fluency and comprehension has improved so much. (#28) 31-66*

The program was really helpful. It was a reminder for my son and myself. It helps us to focus more on reading than watching TV. Thank you! (#31) 80-67

As adults, we use close captioning a lot when we watch TV/movies. Did not realize what an impact it could make on my child's literacy skills!! We now make it a habit to use close captioning always. My daughters used to use CC before, but not so consistently or consciously. (#33) 131-120

My 4 year-old daughter really took to it, too! They both would let me know if I "forgot to turn the words on." (#34 SPED) 48-45

Note. The numbers in the parentheses represent the number code each participant was given. The two numbers separated by a hyphen represent the EndYear1 of first grade-BeginYear2 of second grade. The asterisk mark indicates that no summer slide occurred, but rather an increase in reading achievement occurred.