The Potential of Television Programming as a Resource to Facilitate Academic Progress for Students who have a Specific Learning Disability in Reading

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Dedication

I dedicate this dissertation to my mother and father, who have always encouraged me to aspire to being my best in character, education, and career. I am forever in their debt for their guidance, wisdom, support, and especially for being role models and examples of hard work, commitment, and integrity. This dissertation is also dedicated to my husband who never fails to encourage me in my life's aspirations. Lastly, I would like to dedicate this study to my children, who have encouraged and inspired me to see this project to the end and who have been patient through the years as I have worked through my doctoral studies and dissertation.

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Abstract of the Dissertation

The Potential of Television Programming as a Resource to Facilitate Academic Progress for Students who have a Specific Learning Disability in Reading

Television has been perceived as a possible instructional tool. Research, however, has been unable to determine the television industry's ability to meet children's needs despite federal government's efforts to regulate programming through policy.

Television's ability to impact learning needs closer examination especially considering that younger audiences are becoming increasingly diverse. The National Center for Education Statistics (NCES) found that the percentage of students with disabilities was approximately 13% by the 2008-09 school year with students having a specific learning disability representing the largest group. Reading, in particular, was an identified area of deficiency in 80% of the millions of students with learning disabilities (Therrien & Hughes, 2008).

This qualitative study's objective was to examine current children's television programming's ability to foster reading skill development in students who have a specific learning disability in reading. Using Anderson and Lorch's (1979) active viewing theory as a lens, I conducted a content analysis of three episodes for each of the following shows for program visual and audio elements that may foster an educational learning environment and for demonstrated use of proven classroom teaching strategies: a) *SuperWHY!*, b) *Martha Speaks*, c) *WORDGIRL*, d) *The Electric Company*, e) *WordWorld*, and f) *Between the Lions*.

All shows' episodes contained proven classroom teaching strategies. Common to all six shows was the strategy of teacher modeling. *SuperWHY!* demonstrated every research-based strategy in every episode with the most-used strategies being questioning,

teacher modeling, and accessing prior knowledge. With regards to the shows' ability to promote a multimedia learning environment, results per show varied. Across its three episodes, *SuperWHY!*, however, had evidence of the most regular use of effective audio and visual elements.

This study provides an examination of television's ability to serve as an instructional tool for students with a specific learning disability in reading. Its findings have implications for further investigation in television's ability to reach this population as well as other learning disabled populations. This study's results also provide implications for practice as well as policy in ensuring the creation and delivery of quality educational programming that meets the needs of a widely diverse audience.

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CHAPTER 1:

INTRODUCTION

Overview

Children have been known as a television viewing audience since 1960. Since that time, the Federal Communications Committee (FCC) mandated that the broadcasting industry provide programming that meets the needs and interests of this young audience. The industry, however, has struggled to show evidence of quality programming to its viewers. Even with the FCC's involvement to hold the industry responsible, the question still exists as to whether or not television addresses children's academic and social needs.

Further federal government directives through the creation of several policies could not ensure quality programming. For example, the creation of the Children's Television Act of 1990 provided networks with a framework in delivering programming and held the broadcasting industry accountable by requiring action in order to earn license renewal. Kunkel and Canepa's (1994) study found that the number and quality of shows geared towards children did not improve significantly. These researchers suggested that the Act's vagueness in its guidelines and requirements may have been part of the problem. Later, an amendment to this Act, the Three-Hour Rule, quantified the obscure language in the 1990 Act by specifying the amount of air time of children's programs required from networks. Yet, the issue of quality programming still remained.

After investigating numerous shows offered by a variety of networks, Jordan (2004) found that the industry's practice is driven partly by business, profits, and overall economics. Her finding came from noticing that networks aired more programs that have a prosocial lesson as opposed to programs with a pure academic focus. When

interviewing network executives and consultants, Jordan found that shows that had a focus on social development were more profitable. Therefore, since shows with a prosocial focus gained more profits, networks were more apt to create and air such shows. The industry's choice to air more prosocial content did not hinder their compliance with the Act of 1990; hence, holding the industry accountable to produce and air more academically-oriented shows was not warranted. Nonetheless, the needs of the children still existed and the need, therefore, of the broadcasting industry to provide educationally-rich programming that supports cognitive growth as well still existed.

Altheide (1996) claimed that "mass media and especially television are the most important social institutions in the Western world" (p. 59). Watkins (1985) noted that in modern American society, television viewing is considered a dominant activity, which is defined as "a set of tasks that are common to most children in a particular culture" (p. 324). Furthermore, according to the 2004 report by the EDC's Center for Children and Technology, "visual media is already an essential component of classroom instruction, with almost all teachers employing video in some form in their teaching" (p. 2). Thus, as Altheide (1996) stated, "Studying television has never been more important or challenging than it is today" (p. 59).

Numerous studies have illustrated the ongoing debate of the service that children's programming provides. Researchers such as Stein and Friedrich (1975) and Bogatz and Ball (1971) found that children learned the social and academic skills taught through shows such as *Mister Rogers' Neighborhood* and *Sesame Street*. In contrast, Mar, Tuckett, and Moore (2010) found that television did not impact children's social development. Also, Shin (2004) studied the effect of television on student achievement

and found that an increase in viewing resulted in less time dedicated to academic pursuits, thereby having a negative impact on student achievement. Additionally, Shin's results also found that students' impulsive behaviors increased as viewing time increased.

Current research reflects the ongoing debate of the effectiveness of television programs' ability to support the learning of the general student population. However, in recent years, television's younger audience has been recognized as an assembly of students with varying learning styles and individualized needs. The question, therefore, arises as to whether or not the television industry can support such a diverse community of learners.

According to the National Center for Education Statistics (NCES), during the 1976-77 school year, about 8% of children attending U.S. public schools between the ages of three and twenty-one had disabilities and of the 8%, students with specific learning disabilities represented about 2%. By the 2008-09 school year, the percentage of students with disabilities in U.S. public schools had grown to approximately 13%, and of the 13%, students with specific learning disabilities held the highest representation of 5%. The increased number of students found eligible with disabilities may be partly justified by the fact that the amended 2004 Individuals with Disabilities Education Act (IDEA) no longer required the discrepancy between intellectual ability and academic performance to determine the existence of a disability. IDEA stated that schools may instead use information from a student's response to research-based interventions as part of the eligibility evaluation process.

Therrien and Hughes (2008) stated that students who have learning disabilities often have reading as their main area of weakness. In his meta-analysis of research on

the effectiveness of interventions with this population, Swanson (1999) also affirmed that children with learning disabilities experience reading difficulty as a major difficulty. Citing Shapiro, Church, and Lewis (2002), Therrien and Hughes (2008) illustrated that 80% of the millions of students with learning disabilities have reading as an identified area of deficiency. According to the National Center for Educational Statistics, 66% of the nation's 4th grade students who were identified as having a disability and who were assessed by the National Assessment of Educational Progress (NAEP) scored below the basic level in the 2009 NAEP reading assessment compared to 31% of their counterparts who were not identified as having a disability who scored at the below basic level. Results were similar for 8th graders, 63% of students with disabilities scored at the below basic level compared to 22% of those 8th graders who were not identified as having a disability.

There is much research on special education and policy regarding educating children with special needs. The idea of individualism is the basis for the creation of IDEA. 20 U.S.C. § 1400 (c)(1) (2004) of the IDEA presents that a disability is "a natural part of the human experience." IDEA's objective is to protect the rights of people with disabilities by fostering the educational progress of this population. 20 U.S.C. §1400 (a) of the IDEA adds that "improving educational results for children with disabilities is an essential element of our national policy of ensuring quality of opportunity, full participation, independent living, and economic self-sufficiency for individuals with disabilities." Therefore, Congress purposed IDEA with the following intentions (20 U.S.C. §1400 (d)):

> (1)(A) to ensure that all children with disabilities have available to them a free appropriate public education that emphasizes special education and related

> services designed to meet their unique needs and prepare them for further education, employment, and independent living;
> (B) to ensure that the rights of children with disabilities and parents of such children are protected; and
> (C) to assist States, localities, educational services agencies, and Federal agencies to provide for the education of all children with disabilities;
> (2) to assist States in the implementation of a statewide, comprehensive, coordinated, multidisciplinary, interagency system of early intervention services for infants and toddlers with disabilities and their families;
> (3) to ensure that educators and parents have the necessary tools to improve educational results for children with disabilities by supporting system improvement activities; coordinated research and personnel preparation; coordinated technical assistance, dissemination, and support; and technology development and media services; and
> (4) to assess and ensure the effectiveness of efforts to educate children with disabilities.

IDEA defines the term "free, appropriate public education" or "FAPE," "special education and related services that"—

> (A) have been provided at public expense, under public supervision and direction, and without charge;
> (B) meet the standards of the State educational agency;
> (C) include an appropriate preschool, elementary, or secondary school education in the State involved; and
> (D) are provided in conformity with the individualized education program required under [IDEA]. 20 U.S.C. §1401 (9).

FAPE has been a vague term of interpretation. Crockett and Yell (2008) recognized that although IDEA provided a roadmap in addressing special needs population's educational needs through FAPE, an updated and refined definition of FAPE is necessary so that educators may have a clearer framework in addressing these students' needs through research-based methods and progress monitoring.

According to Crockett and Yell (2008), special education is a uniquely-designed educational instruction in response to a student's needs. IDEA, 20 U.S.C. §1401 (29) (2004), defines special education as "specially designed instruction, at no cost to parents,

to meet the unique needs of a child with a disability, including (A) instruction conducted in the classroom, in the home, in hospitals and institutions. . . ." As stated, education is not limited to the school setting, but it includes that in other settings such as the home and other institutions. Crockett and Yell (2008) added that "with the aid of specific and intensive special education that addresses their disability-related needs and ensures their access to the general curriculum, more students with disabilities should benefit from the experiences available to typically developing students" (p. 386). Since it is known that education can occur in additional places such as in the home and since it is known that special education services increase access to experiences, then, the possibility of television programming as a learning support to increase the special needs population's access to its educational value should be considered.

Although there is a vast amount of literature around special education especially as it relates to school systems and professional educators, there is limited literature that specifically addresses the ability of television to have an impact in supporting the learning of students with special needs. Since research has shown that children spend the majority of their free time watching television and because individual students with varying needs make up this viewing audience, it is necessary to conduct further exploration of television's potential to foster academic development in students, particularly students with specific learning disabilities in reading, by focusing on television program content.

Statement of the Problem

School classrooms consist of diverse learners, whose learning needs and traits need to be addressed. Television can be a resourceful tool to support learning of all

students, including students with learning disabilities. Studying the influence of television as a potential source of learning could provide a platform for more creative programming intentionally designed to meet the needs of students with learning disabilities.

Currently, legislation on educating students with special needs centers on school-based practices. Also, present policies on media use, specifically television use, do not directly address the learning differences of students with learning disabilities in reading. My study also, therefore, implies the need for policy change or the need for additional policies that focus on more explicit accountability procedures for broadcasting networks' practice in ensuring more quality programming for diverse learners.

Purpose of the Study and Research Questions

My investigation recognizes that watching television is a common children's activity (Watkins, 1985), and research proposes that when people watch television, they are actively viewing and comprehending the televised material (Kelly, 1985; Lorch & Anderson, 1979). Since there is limited research on television programming's influence on the learning of students with disabilities, my investigation aimed to help lay the foundation of the topic. The purpose of this study, therefore, was to explore television programming as a potential resource in aiding the academic progress of students with a specific learning disability in reading literacy. The purpose was not to study the impact of programming on student learning.

The study examined the educational content of television shows for its ability to accommodate deficiencies in literacy. My overarching question is: how does current children's educational television programming address the learning needs of students

with a specific learning disability in reading? A subquestion for this study is: a) What research-based instructional strategies and program characteristics such as audio and visual cues used by television programming can foster reading skill development for students with a specific learning disability in reading?

Statement of Potential Significance

The broadcasting industry has been mandated to provide quality programming that meets the needs of children since 1960, the date when children were first recognized as a television viewing audience (Kunkel, 1991; Kunkel & Canepa, 1994). Although numerous studies illustrate the ongoing dispute regarding television's ability in promoting children's social and cognitive development, there is existing literature that does support the notion that television can have a positive influence on learning. For example, survey findings and research by the EDC's Center for Children and Technology (2004) shows that educational television programming strengthens comprehension, supports lessons, encourages motivation, aids teacher effectiveness, and accommodates for varying learning styles. In fact, according to this 2004 report, with video becoming digital, the educational value of such television programming strengthens because of the ability to use such media in more flexible manners. Given the rise in the number of students with special needs, given the potential of television as a resource to support learning, and given the increased use of media and technology in the classroom, my research interest lies in children's television programming and the accessibility of its educational content for all students, particularly students who have learning disabilities in reading. My study explored television programming's ability to connect with special needs population in ways that foster learning and progress. It identified research-based

strategies as well as program characteristics that may assist with the learning process of students who have a specific learning disability in reading.

On October 2010, President Obama signed the 21st Century Communications and Video Accessibility Act (CVAA), 47 U.S.C. §§609 et seq. (2010), which provides persons with disabilities more access to information from modern technologies including television. CVAA builds on earlier legislation that aimed to increase television and telephone access for disabled people. The CVAA hopes to ensure increased accessibility to content from modern media for this special needs population by allowing technology services and products to be entirely available with the full use of Broadband and by allowing disabled people to view television and Internet programming more easily. This Act directly addresses the needs of people who are visually impaired or hearing impaired (47 U.S.C. §§611, 613). However, the Act was built upon previous legislation that technology services would be accessible to all people with disabilities.

Additionally, Title II of the Americans with Disabilities Act (2010), 42 U.S.C. §§12131-12134, and its supplementary regulations, 28 C.F.R. §35.160, mandate public schools to provide students who have vision, hearing, or speech disabilities with effective communication through suitable accommodations and services. The regulations employing Title II, 28 C.F.R. §35.160 consider that "effective communication" includes clear and comprehensible written or spoken communication. Although Title II requires school systems to address the needs of students specifically with vision, hearing, or speech disabilities, it recognizes that people with disabilities that impact any aspect of communication including reading communicate differently than people who do not have disabilities that affect communication. Nonetheless, its discussion on the provision of

"auxiliary aids and services" centers on ensuring effective communication for the hearing- and visually-impaired.

There is currently little to no research done in the area of accessibility of television programming for students with varying disabilities, including the learning disabled. However, there is substantial research done in the area of television programming and its educational value. There is also extensive research done specifically on children with disabilities and how they learn. My goal was to bridge these two areas and provide more discourse on the topic of program content accessibility for this special population. My investigation on this topic may lead to practical implications that suggest the incorporation of quality educational television programs as media supports to current reading programs and curricula. Importantly, my study provides implications for stronger accountability regulations through current policies and/or implications for the creation of policies that are more explicit with their expectations in the provision of quality educational television programming for all youth.

Personally, I am interested in this topic for several reasons. My professional background includes working with children with special needs, primarily students with mild learning disabilities, and I question whether students with reading deficits are able to grasp content and skills taught from television shows. Additionally, I desire to gain a fuller understanding of how television educational content can be created to support the learning of a diverse community of learners and hope to be an impetus for policy change. Eventually, I aim to merge my creative talents with my educational career by creating quality educational television programs for diverse populations.

Watkins (1985) stated that television is seen as part of a child's environment with which he or she chooses to actively interact. Kelly's (1985) article on the use of videos in instructional practice spoke of 'viewing comprehension,' describing a person's capacity to understand and apply the educational content of a television program. An instrumental theoretical framework for this study that encompasses these ideas is active viewing theory (Lorch & Anderson, 1979).

Active viewing theory (Lorch & Anderson, 1979) proposes that children are active versus passive learners. In their study, Anderson and Lorch found that children's level of television content comprehension determines the level of viewing engagement behaviors. They specifically found that if children found a program to be comprehensible, then they visually maintain attention to the program. They learned that children visually attend to the television when auditory elements are introduced. According to the study, children's attention based on comprehension level and their reaction to cues such as auditory elements demonstrate that children engage actively with television content.

In their studies of *Blue's Clues* episodes and children's viewing behaviors, Crawley et al. (2002) found several patterns related to Lorch and Anderson's (1979) findings: 1) children's visual attention is positively correlated to information-processing demands of program content and this attention lessens as content is mastered, 2) program engaging behaviors are viewed as a result of learning, 3) increased familiarity with program formats increases opportunity to learn program content, which, in turn, increases program participation, and 4) viewing behaviors are taught and can be taught across various shows and series.

Using active viewing theory as a theoretical framework helped provide a conceptual framework in hopes of gaining valuable findings that would result in better service to special populations by addressing the differences in how they learn. Given that students who have an identified disability in reading have information-processing difficulties and given the assumption that children are active and engaged participants while viewing television, my investigation explored how program teaching strategies and elements may assist the ability of students who have a specific learning disability in reading literacy to access and learn from television program content.

Conceptual Framework

My study is based on the assumption that people think and behave based on how they create their realities and how they find meaning in their realities. This constructivist view recognizes that experiences have numerous and diverse meanings and experiences are, therefore, primarily subjective (Creswell, 2007). Crotty (1998) further clarified that constructionism involves the building of meanings as one engages with the world that he or she is interpreting. Everything is, therefore, constructed through the process of communicating and interpreting what was communicated (Altheide, 1996). My study took into account that the special needs population processes communicated information differently from its general education peer population.

Lorch and Anderson's (1979) active viewing theory provides an appropriate theoretical perspective to guide this study. This theory's proposal that children are active learners lays the foundation of this study. Lorch and Anderson studied the relationship between program comprehension and attention to the program. Using toys as potential distractions during the viewing of the show, their study of 72 five-year-olds' watching

"Sesame Street" found that the 36 participants who viewed the 40-minute show without the presence of toys did not gain increased comprehension of the program content compared to the 36 participants who viewed the show with the presence of toys. Though their study found no significant effects of visual attention on comprehension, their study did learn that there is a relationship between children's visual attention to the show and comprehension.

Lorch and Anderson (1979) found that children's visual attention to the show is positively related to their comprehension of the show's program content. Children's level of program understanding impacts their attention to the program. For instance, Lorch and Anderson discovered decreased attention when program material was viewed as incomprehensible. Likewise, if the children better comprehended the learning content, their attention to the show was higher.

Lorch and Anderson's (1979) study signifies the relationship between comprehension and attention. This found relationship implies that students are able to learn and attend to television content. Furthermore, the study found that appealing visual and auditory program elements do play a role in gaining and sustaining attention to the television show. Lorch and Anderson (1979) stated that auditory elements signal "informative and comprehensible program content" (p. 726). This study supports the idea that television programming provides cues to educationally valuable content; hence, the study implies the influence of not only visual, but auditory elements on attention as well as comprehension. When the program content "becomes either incomprehensible, redundant, or not otherwise visually and auditorily attractive," attention is no longer maintained (Lorch & Anderson, 1979, p. 726).

Limitations of their study (Lorch & Anderson, 1979) suggest that this study's findings cannot be generalized. Their study involved one small-ranged age group of 4- to 5-year-olds from one city in the United States. The study used only one television program, "Sesame Street." Moreover, the television show was not an episode that aired on television for a wide- viewing audience; the show used was specifically created for research purposes. Though using such a show sample may be beneficial in that it eliminates the possibility of some children having been exposed to the learning content, specific differences between such created shows and typically-aired television shows were not discussed.

I considered disability theory as a possible framework for my investigation. As Creswell (2007) noted, a disability is considered a difference as opposed to a flaw. According to IDEA (2004), a specific learning disability affects a person's ability to think, speak, listen, read, write, and spell because of a disorder in at least one of the psychological processes involving written or spoken language. Taking this into consideration, there are wide variety of disabilities and specifically, a wide range of disabilities as they relate to reading differences. Though disability theory would have been fitting to use as a theoretical lens for this study, it was more appropriate to have a comprehensive discussion on reading disabilities to understand the varying types of reading deficits or inefficiencies as opposed to using a specific reading disability theory as a lens.

Aaron, Joshi, and Williams (1999) entitled their article "Not all reading disabilities are alike" appropriately. Broadly defined, they stated that a reading disability is below-average performance on a standardized reading assessment and no other factors

caused such performance. Their study found that reading disabilities involves can involve at least one of the following issues: a) deficits in decoding, b) deficits in comprehension, and c) information-processing deficits.

Torgesen (1986) also spoke of the verbal deficit theory, which focuses on semantics and language to understand reading weaknesses. This theory focuses on practice and direct instruction when reading in context as recommendations for remediation. Martin, Martin, and Carvalho (2008) also supported the theory that learning disabilities can be attributed to information processing problems, biological factors, and life experiences, further recognizing that reading disabilities can also be related to attention difficulties, language-processing problems, other central-processing deficits. Other researchers such as Gersten, Fuchs, Williams, and Baker (2001) stated that disabilities are a result of inefficiencies of cognitive processing rather than deficiencies.

Considering that reading disabilities is a complex term, consisting of several theories of conceptualization, finding the most effective interventions could be challenging. For instance, Chard, Ketterlin-Geller, Baker, Doabler, and Apichatabutra (2009) analyzed research that studied repeated reading as an intervention for learning disabled students. Their examination indicated that repeated reading does not qualify as an intervention supported by careful research. Therefore, their study was unable to draw conclusions about this intervention because the researchers were unable to determine whether or not repeated reading is an "evidence-based" practice. Though their findings question repeated reading as "evidence-based," the researchers were, at the same time, weary of implying that this practice be discontinued due to the fact that repeated reading

has theoretical support in being a logical task in improving fluency and that positive outcomes of this intervention have been documented.

Wanzek and Roberts (2012) compared the impact of different treatments on students with reading deficits: a) word study focus, b) comprehension emphasis, c) using student reading profile to determine either the word study focus or the comprehension focus treatment, and d) school intervention (comparison group). A sample of 87 students from one United States district participated. These fourth grade students represented a culturally and linguistically diverse population and had been clearly defined as having reading impairments and being at risk for disability identification. Results of the analyses of covariance (ANCOVA) indicated no significant differences between all four treatments, including the school-based intervention program, on student outcomes. Researchers acknowledged that a possible limitation to their study was the factor of time; their daily intervention consisted of 30 minutes. They speculated that a longer time could have made the interventions more rigorous. Furthermore, if a longer implementation time occurred, a treatment combining both word recognition skills and comprehension skills could had impacted student learning for this student population greatly.

Many other researchers conducted meta-analyses of past research on teaching reading strategies and interventions for the learning disabled. Swanson's (1999) examination of 30 years of research found strategy instruction effective in addition to direct instruction and a combination of both these types of instruction on word recognition and comprehension. Swanson found specific interventions such as segmentation, sequencing, and advanced organizers strengthened word recognition skills and interventions such as elaboration, teacher modeling, strategy cues, group instruction,

and directed response and questioning and management of difficulty of task-processing demands enhanced treatment results in the area of comprehension. Gersten et al.'s (2001) meta-analysis of studies addressing the effectiveness of reading instruction based on test type, narrative or expository, also found that strategy instruction such as story mapping has a positive impact on student performance. Berkeley, Scruggs, and Mastropieri's (2010) investigation on research studies conducted between 1995 and 2006 established that text enhancements and questioning/strategy instruction improved student outcomes when using criterion-referenced measures and with fundamental reading skills instruction and questioning/strategy instruction resulting in highly significant results on norm-referenced tests. The findings provided insight on reading instruction for reading-disabled students with strategy instruction being established by all three examinations of past research as an effective intervention.

The Division for Learning Disabilities and Division for Research of the Council for Exceptional Children view strategy instruction as a proven effective intervention for students who struggle with reading. Strategy instruction's basic principles involve modeling and teaching comprehension skills in the primary grades, teaching decoding and meaning of unfamiliar words, expose students to a variety of narrative and expository reading material, have students use their prior knowledge to improve comprehension of text, teach strategies based on students' needs, and teach students how to monitor their own reading. According to several meta-analyses such as those mentioned earlier, strategy instruction has an overall effect size that ranges from 0.82 to 1.13 with student self-questioning having a powerful effect size of 1.33 (Brigham, Berkeley, Simpkins, & Brigham, 2007).

Television has long been debated as an effective, supplemental tool to teaching children ever since they have been recognized as an audience by the FCC in 1960. Research on children's viewing of television over several decades looked at television's ability to meet the needs of younger audiences. However, in spite of such research, ever since children have been known as a consumer of television programming, the existence of quality programming meeting the needs of diverse learners has yet to be determined.

Quality educational television has not been characterized according to Moore (2010) in his entry on *Educational Television* in the Encyclopedia of Educational Reform and Dissent. He proposed that effective instructional programming depends on how the program is distributed, the organization that supports the program, and the program's specific design. He added that professional writers, talent, and subject specialists likely will enhance the instructional effectiveness of the program.

In their attempt to understand what characterizes quality programming, Alexander, Hoerrner, and Duke (1998) conducted a study on children's television programs that earned the distinction of the George Foster Peabody Award by examining their program characteristics and the television industry's claims of having value. The researchers reviewed the show's entry forms and the Peabody Award's National Advisory Board's citations of 67 children's programs that aired between 1948 and 1995. Using a coding process, they discovered six broad themes when examining industry claims and used these six categories to code the Board's citations: a) instructional excellence, which included lessons on cognitive as well as social skills b) excellence of program characteristics, c) impact, d) age-appropriateness, e) production excellence, f) prestigious participants. About 30% of program producers claimed to have instructional

excellence; similarly, 28% of the Board's citations were in instructional excellence. Instructional excellence was the most prevailing theme found in both the claims and citations. Though the study's comprehensive examination took into consideration that the Board's winning criteria have evolved and changed in the course of 50 years, results indicate a decrease in the number of shows meeting the criteria in the six categories since the 1970's, which had 22 winning shows compared to 11 in the 1990s.

The study's attempt to further define 'quality programming' provided some insight into industry perspectives compared to those of policy makers. The television industry viewed quality programming as programming that not only has educational value, but programming that also has excellent program qualities such as its ability to inspire or its ability to entertain, excellent production qualities such as musical elements and animation quality, age-appropriateness, ability to impact large audiences, and the existence of celebrity or subject expert participation.

In contrast, the Children's Television Act of 1990, 47 U.S.C. §§ 303a-303b, 393a, 394 (1990) aimed to increase quality programming for younger audiences by focusing on educational content as opposed to other production-related factors. Though the purpose of the Act was to provide educational programming that serves students' academic and social needs, the term "informational and educational programming" appeared vague to the television industry (Neff, 1994). This may be linked to Kunkel and Canepa's (1994) finding of the impact of this Act, which showed insignificant improvement in the number and quality of children's shows.

An amendment to the Act occurred in 1997, 47 C.F.R. § 73.671 (1997). This change is named the Three-Hour Rule which aimed to provide more clarity and more

structure to the Act. In order to obtain license renewal, the Three-Hour Rule states the daily time period of when children's programming should be aired and states the minimum required hourly amount of children's programming to be aired by broadcasters. According to Jordan (2004), policy makers initially intended the television industry to air programs that focused on academic areas such as math, science, and language arts. As implied by Alexander et al.'s (1998) research findings, however, the industry worked under a broader definition of educational and informational programming, which included shows promoting social and emotional development. In the Three-Hour Rule, 47 C.F.R. §73.671, the FCC allowed this broader definition and also mandated broadcasters to air at least three hours of children's educational shows per week. In spite of providing more structure to the television industry's production of children's programming, Jordan's (2004) study of this amendment's effectiveness found that major networks focused their educational lessons on social/emotional development and less on cognitive development. Her findings were unable to conclude whether policy made a difference in increasing the quality programming that effectively met social and academic needs of children.

Determining television programming as quality relies greatly on children's access to the educational content. It is, therefore, important to discuss children's learning behaviors from such media. Richert, Robb, and Smith (2011) studied the learning potential of children 3 years old and younger. They discovered that this age group is able to cognitively comprehend and learn from 2D images. Additionally, their findings suggest that this age group needs support in the form of social interaction to reinforce their skills in auditory perception, that is, in their ability to discern between phonemes, to

learn vocabulary, and to imitate what they learn. They also found that the younger children within this age range needed the program content to include real-life symbols in order to understand and learn from the program, indicating the importance of real-world context in the learning experience. Lastly, the learning from television content increased when educators and parents are involved in helping make the connections between television content and real life (Richert et al., 2011).

Watkins (1985) looked at television from the perspective of childhood development. In his essay, under the assumption that television viewing is a dominant activity, he suggested that program content influences children's development into productive societal members. Using the term 'dominant activity' from Soviet cognitive psychology, defined as "a set of *tasks* that are common to most children in a particular culture" (p. 324), Watkins stated that a dominant activity is based on the understanding that "responses, behavioral and cognitive, built over long periods become internalized and used to guide information processing and social behavior" (p. 324). His examination shared the same philosophy as Lorch and Anderson (1979): children interact and engage with program content.

In order to actively engage during the viewing process, children work to understand television's symbol system. Watkins (1985) suggested that learning how to watch and learn from television takes years of experience and what he refers to as 'cognitive sophistication' (p. 330) in learning what program visual and audio elements signal. As this sophistication grows, children also learn to depend on language to make sense of dialogue and essentially, of the world around them.

In their examination of television viewing as it relates to processing and memory, Reeves and Thorson (1986) looked at a number of psychological experiments. Their examination was based on the assumptions that memory is dependent upon mental processes of attention and effort, which are dependent upon the viewers' processing strategies and the program's message structure. Their discussion on television viewing centered on the following issues: a) stimulus unit size, b) complexity of stimuli, c) time units, d) inter- and intra-stimulus contrasts, and e) content and form, and f) active and passive processing. They found that less mental effort was necessary to process complex versus simple messages. However, depending on stimulus size, local complex features such as scene changes needed more mental effort than local simple features. This finding indicates the involvement of two levels of processing: a) local complex elements may make it difficult to process sensory signals and b) globally simple features involve processing meaning. Their examination also found that left brain arousal existed with positive television scenes and right brain arousal existed with negative ones, which was a shared finding with non-television experiences. They also determined that meaning and structure do affect viewers' ability to process information. For example, the more complex the structure and content, the more processing demands are required. Lastly, they suggested that viewers are both active and passive during the viewing process as evidenced in their examination of alpha levels in viewers.

Anderson and Lorch (1983) also believed that understanding the process of viewing television should take into account both "what the viewer brings to the television at least as much as it brings to the viewer" (p. 30). They, however, stated that the reactive viewing theory, which suggests that television controls the attention of its

viewers, whose "Comprehension processes follow automatically and rotely" (p. 4), has been widely accepted in spite of evidence and the inconsideration of alternative theories. Anderson and Lorch challenged the reactive view that people's cognitive processes are wholly passive when watching television with their alternative theory, active theory or active viewing theory.

To understand this theory further as it relates to how children learn from television, Anderson and Lorch (1983) believed that watching television involves an active cognitive interaction between the television and its viewing environment and the viewer. They stated that their position is closely aligned with the cognitive theory of understanding discourse, arguing that the continual cognitive processing of watching television is motivated by schema. They asserted that schema is developed from cognitive development, prior and presently occurring life experiences, and knowledge. As a young infant, attention to television is very limited because their schema is limited; however, as the infant gains more world understanding and develops cognitive processing skills, his viewing schema also grows. This concept of the active viewing theory strongly contradicts the reactive theory, which argues that infants are passive because their attention is controlled by the program content. In fact, Anderson and Lorch (1983) stated that children's visual attention grows during their preschool years due to increased world knowledge and experiences, cognitive growth, and an increase in understanding television structures and elements. They added that such an increase in viewing schemata occurs in the 'normally developing child' and hence, program content has a more educational and entertaining impact. They also clarified that attention does not

necessarily lead to program comprehension, but they stated that it is necessary for any understanding to occur.

Anderson and Lorch's (1983) program of research studies on visual attention and comprehension that developed their active theory were based on four premises. The first is the consideration of the viewing environment's ability to support other activities in which the viewers can participate. This is an essential factor to consider as alternative activities can impact attention patterns during television viewing. The second premise is that sustained attention is based on the viewer's ability and desire to understand the schema. They argued that attention to the television viewing ends when the content is completely understandable or predictable; likewise, if the program content is too incomprehensible, viewer attention ends. However, the third premise explains that visual attention can return because of external factors such as program audio and visual cues. According to Anderson and Lorch (1983), Hochberg and Brooks (1978) spoke of the phenomenon 'attentional inertia,' the fourth premise that asserts in spite of breaks in understanding program content and in spite of content changes, cognitive processing still occurs. Anderson and Lorch's active viewing theory illustrates the viewer's ability to continually attend to and interact with program content because of continual comprehension processes.

Methodology

In an attempt to answer my overarching research question, I evaluated current children's television programming for the existence of research-based instructional strategies and program elements that may support reading skill development or that may provide reading remediation for students with a specific learning disability in reading. I

selected three sample episodes of six television program series that were created to foster reading development from one primary broadcasting network that is known to intentionally provide educational programming for youth.

I utilized information from my study's literature review on research-based instructional strategies, interventions, and/or accommodations for students with specific learning disabilities in reading in identifying elements and strategies in television programming that may be considered beneficial during the viewing experience. I compiled a list of proven interventions for reference. I also created a protocol in order to conduct a content analysis of each television program episode. My analysis involved emergent coding of the data to identify every program audio and visual element and accommodation as well as every research-based strategy and intervention that materializes during the viewing of each episode.

Delimitations of the Study

This study was delimited to studying students with a specific learning disability in reading. It did not, therefore, include students with other disabilities such as students with attention deficits or students with autism. This study is also bounded to evaluating television programs that are intended for educational purposes specific to reading skill development as opposed to those programs created to support the development of other academic skills or those created specifically for entertainment purposes.

Limitations of the Study

This study focused on students with a specific learning disability in reading and did not address students with secondary and tertiary disabilities. Therefore, findings from

this study may not be transferrable to such populations. For instance, some students may also have been identified as a student with an Other Health Impairment due to symptoms associated with attention problems. The lack of focus and hyperactivity in addition to the students' deficits in reading may impact these students' level of comprehension of television program content. Additionally, though some students may have not been identified with an additional disability, they may still exhibit certain characteristics that can interfere with their ability to understand program content. For instance, students mature at different rates. Also, some students' ability to remain focused and attentive while television viewing may differ when compared to their same-aged peers. These particular factors are important limitations to the study's findings.

Also, I used relevance or purposive sampling (Krippendorff, 2013) and chose six program series from one broadcasting station because together, they address a variety of literacy skills. This study acknowledged that other television stations air educational programming that addresses reading skill development but chose not to include their programs in the investigation. Therefore, not including additional programs in the study could have resulted in findings lacking additional insightful information.

Key Terms

Specific learning disability (SLD) defined by IDEA, 20 U.S.C. §1401 (30) as:

> (A) In general,
>
> The term "specific learning disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations.
>
> (B) Disorders included
>
> "Such term includes such conditions as perceptual disabilities, brain injury,

minimal brain dysfunction, dyslexia, and developmental aphasia."

(C) Disorders not included

Such term does not include a learning problem that is primarily the result of visual, hearing, or motor disabilities, of intellectual disabilities, of emotional disturbance, or of environmental, cultural, or economic disadvantage.

Accessibility/access—Related to the concept of special needs students' ability to access general education curriculum through special education; used in this study in terms of television shows' ability to teach their learning content and therefore, the students' ability to learn the content,

Supplementary aids and services, as defined by IDEA, 20 U.S.C. §1401 (33), are "aids, services, and other supports that are provided in the regular education classes or other education-related settings to enable children with disabilities to be educated with nondisabled children to the maximum extent appropriate."

Peer-reviewed research or research-based strategies—20 U.S.C. §1414(d)(1)(A)(i)(IV) of IDEA mandates that every IEP include

a statement of the special education and related services and supplementary aids and services, based on peer-reviewed research to the extent practicable, to be provided to the child, or on behalf of the child . . .

(aa) to advance appropriately toward attaining the annual goals;

(bb) to be involved in and make progress in the general education curriculum in accordance with subclause (I) and to participate in extracurricular and other nonacademic activities; and

(cc) to be educated and participate with other children with disabilities and nondisabled children in the activities described in this subparagraph.

Evidence-based practices—In a 2014 Council for Exceptional Children (CEC) report,

CEC's evidence-based workgroup of special educators updated standards for determining evidence-based practices in special education. Their work was guided by feedback from other special educators in a Delphi study and by Gersten et al.

(2005) and Horner et al.'s (2005) research. Research designs such as experimental group comparisons and single-subject experimental designs were used in the creation of the standards list due to the designs' intent to determine causality. The use of the criteria list classifies studies into five categories: a) evidence-based, b) potentially evidence-based, c) mixed evidence, d) insufficient evidence, and e) negative effects. The following are the quality indicators: a) adequate information on context and setting, b) information of participants, including evidence of the existence of a disability, c) sufficient information of the intervention agent, d) clear description of the intervention, e) fidelity of implementation, f) internal validity, g) dependent variables and outcome measures are properly applied to determine the impact of the intervention on results, and h) appropriate data analysis.

Active viewing theory—proposes that children are active learners when viewing programs, not passive learners (Anderson & Lorch, 1983; Lorch & Anderson, 1979).

Viewing comprehension—one's ability to understand and apply what he or she learns from a watched program.

CHAPTER 2:

RELEVANT SCHOLARLY LITERATURE

Introduction

From the time when children were first recognized as a television viewing audience in 1960, the broadcasting industry has been charged with providing programming that meets the needs of young people. Based on varying findings from numerous studies, it remains unclear as to whether television program content fosters children's social and cognitive development. Since research contends that children spend most of their time viewing television and because there has been an increase in students identified as having special needs since the 1960s, it is essential to conduct further exploration of the television broadcasting industry's role in potentially supporting the learning of all students.

The process in conducting this literature review involved searching for resources using The George Washington University online library searches. The primary databases used to find resources were Education Resources Information Center (ERIC), Journal Storage (JSTOR), and Academic Search Premier. Also, the online e-journals were instrumental in locating full- text resources. The following key terms and topics were mainly used in different combinations to conduct the online library searches: (a) media policy, (b) television policy, (c) education, (d) social development, (e) cognitive development, (f) learning, (g) special education, (h) special needs students, (i) specific learning disability, (j) television, and (k) Children's Television Act of 1990, (l) reading disabilities, (m) effective learning strategies for students with reading disabilities, and (n) flipped-classrooms and (o) television use in classrooms. This review also included the

search for more work from specific authors who has consistently written very relevant material on the topic (e.g., Kunkel). When conducting searches for data from the National Center for Education Statistics (NCES), key terms used were the following: (a) television and achievement, (b) television educational programming and achievement, (c) television and education, (d) television educational programming, (e) television, (f) television programming and cognitive development, (g) reading literacy and special needs population, (h) reading literacy and special needs student population, (i) specific learning disability in reading.

Historical Trends and Educational Programming Policy Making

The Communications Act of 1934

The Communications Act of 1934, 47 U.S.C. §151 et seq., was the major law overseeing the television industry. Airway channels were provided to broadcasters whose agenda reflected serving the needs and interests of the public. License renewal depended upon the broadcaster's ability to address the interests and needs of the public. Inherently, this law incorporated an aspect of accountability and influence on the content seen by television viewing constituents (Kunkel & Watkins, 1987). The Act of 1934 also established the Federal Communications Commission (FCC), 47 U.S.C. §154, which continues to regulate broadcast policy.

Beginning Discussions on Addressing Children's Needs Through Television

The television industry has been airing children's television programming since the 1940s, but it was not until 1960 when the FCC acknowledged children as a major viewing audience that the industry was charged to address their needs through specific

programming efforts (Kunkel, 1991; Kunkel & Canepa, 1994). Despite FCC's recognition of children's programming as a service to the public, this targeted programming declined in quantity and quality shortly thereafter.

Congress, the general public, and the advocacy group Action for Children's Television (ACT) expressed their concerns for FCC's failure (Kunkel, 1991). Pressured to respond, the FCC created the 1974 Children's Television Report and Policy Statement which was a guide broadcasters could use to provide a sensible amount of educational programming (Kunkel & Canepa, 1994). This policy suggested that programming for children to be age-specific; yet, it did not specify the amount of children's programming stations must broadcast (Kunkel, 1991). According to Kunkel and Canepa (1994), this policy was not measurable. Instead, the FCC intentionally created a vague policy hoping that the industry would respond on good faith.

Kunkel and Canepa (1994) reviewed stations' license and renewal claims regarding television programming and found that the FCC's first policy of 1974 rendered no significant results in increasing the quantity and quality of children's programming. More specifically, the FCC had established the Children's Television Task Force to assess compliance to the 1974 policy. The task force reported that there was no improvement to the quality nor number of children's programming (Kunkel, 1991).

Adding to the difficulty of regulating children's programming, the new FCC chair, Mark Fowler, focused on the economic value of television programming. Unfortunately, children's programming lacked economic benefits for the industry (Kunkel & Canepa, 1994). The FCC also argued that since the increase in broadcasting cable channels would, by default, provide competition that would lead to more specific-

audience programming, such as children's programming, the FCC deregulated children's programming (Hutson, Watkins, & Kunkel, 1989). With the Commission's deregulation, children's programming decreased in some stations, but did increase in independent cable stations, where programming was geared more towards entertainment purposes than educational purposes.

In the past, the FCC would have prohibited children's purely entertainment programs as they were created to sell products. However, with an emphasis on economic value, the FCC deregulated these program-length commercials as well. The Commission added that it relied on the broadcasting industry in its entirety to shoulder the burden of children's programming and that serving the needs of children did not have to be the responsibility of individual stations (Hutson et al., 1989). Policies aimed at raising funds for production and broadcasting have, therefore, been solicited. According to Hutson et al. (1989), these funds were not to come from product or commercial sales related to programming because it was believed that eliminating commercial advertisements would encourage more educational value in programs. In other words, as Moran (2006) had stated, young people have become consumers instead of an audience who receives enriching programs.

The FCC did not anticipate the negative impact that their deregulation posture potentially had on the children. For instance, low-income children may not necessarily have access to cable TV and so, their exposure to commercial TV educational programming may be limited when compared to those children who have access to other sources of educational programming such as cable and satellite television (Hutson et al., 1989).

Since the 1960s, it has been recommended that the government create a policy that incorporates a quantifiable measure for broadcasters in order to promote quality and diversity in children's programming (Hutson et al., 1989). As a response to the growing issue of children's programming and FCC's failure to regulate such programming, politicians became more involved in the 1980s (Kunkel, 1991). At that time, Colorado Congressman Timothy Wirth, who had been a supporter of children's programming since 1974, led the House Telecommunications Subcommittee. Wirth proposed bills that reflected ACT's request of the specification of a minimum amount of programming required of each station. Despite the support of child support groups and ACT, Wirth's proposals were never voted on as broadcasters strongly opposed his ideas (Kunkel, 1991).

Later, Massachusetts Congressman Edward Markey became Chair of the House Telecommunications Subcommittee (Kunkel, 1991). He also attempted to provide stronger federal regulation of children's programming. Although his proposal ended up coming to fruition as a policy, namely the Children's Television Act of 1988, a few weeks later, the Senate, now Senator Timothy Wirth of Colorado, and ACT viewed the legislation as weak. The policy simply stated that broadcasters needed to serve the needs of children through overall programming (Kunkel, 1991). Wirth attempted to amend the Act of 1988 with more specific language requiring the industry to provide programming specific to children; however, he met too much opposition. In the end, President Reagan vetoed the Act on grounds that it violated the First Amendment (Kunkel, 1991).

According to Kunkel (1991), Markey proposed his bill again. His Senate counterpart, the Chair of the Communications Subcommittee, Senator Inouye of Hawaii, moved the legislation but with the inclusion of Wirth's proposals.

Children's Television Act of 1990

After several years of debate, a new policy, the Children's Television Act of 1990, finally arose. The Children's Television Act of 1990, 47 U.S.C. §§303a, 303b, 393, 394 (1990), and its employing regulations 47 C.F.R. §§73.671-673, mandate that each broadcaster must provide educational programming to earn license renewal. The Act has four key elements: (a) each broadcaster must address children's informational and educational needs, 47 U.S.C. §303a; 47 C.F.R. §§73.670-673, (b) there are restrictions to the number of advertisements permitted during programs, 47 U.S.C. §303a, (c) the FCC had the power to determine whether or not program-length commercials are allowed, 47 U.S.C. §303a, and (d) the Act laid the foundation for the National Endowment for Children's Educational Television, 47 U.S.C. §394.

The FCC was responsible for the Act's interpretation and implementation and created a framework for broadcasters to apply the new law (Kunkel & Canepa, 1994). The following are key terms of the Act of 1990's framework, 47 C.F.R. §§73.671- 673 (Federal Communications Commission, 1991): (a) stations are obligated to serve children, defined as up to age 16, (b) programs are deemed educational if they foster positive academic and social development, (c) broadcasters themselves determined what qualified as educational, (d) there was no definitive guideline as to what was considered enough educational programming, (e) there were no definitive guidelines for the scheduling of programming, (f) age-targeted programming was not required, (g) short-segment programming such as public service announcements counted as credit towards licensure, and (h) there was no standardization of reporting claims of compliance.

It is worthy to note that the Children's Television Act of 1990, 47 U.S.C. §394, provided the road to the establishment of an endowment for children's television. Later, this endowment would be called the National Endowment for Children's Educational Television. The endowment aimed to provide funding for quality programming specially designed for children. According to the *National Endowment for Children's Educational Television Act of 1989* report, the Endowment aimed to support the creation of programs that built intellectual skills. Grants would be awarded based on two criteria: (a) that the program was aired on public and noncommercial television for the first 2 years and (b) that after the first 2 years, the program is available to commercial television as long as the program is not disrupted by advertisements during its running.

Effectiveness of the Children's Television Act. Kunkel and Canepa's (1994) study investigated the broadcasting industry's compliance claims of the Children's Television Act of 1990. Using data from the license renewal applications of 48 stations representing 17 states, Kunkel and Canepa (1994) calculated the quantity and examined the quality of educational programming based on broadcasters' self-reported claims. The authors found that there was a weekly average of 3.4 hours of regularly aired programming and 2.3 hours of occasional programming (e.g., holiday programming) per quarter. Approximately 52% of the regularly aired programs were shown during the weekends (Kunkel & Canepa, 1994). Though Saturday mornings were often considered the time for airing children's programming, Kunkel and Watkins (1987) asserted that there was little viewing of shows by children during this time period. In fact, their review of prior research indicated that most viewing occurs during morning, afternoon, and beginning evening hours of weekdays. In addition to the insignificant increase in

programming since the Act was implemented, 21% of broadcasters who claimed that they aired programming created specifically for children did not articulate how their programs' content was designed for children. Additionally, broadcasters could claim license renewal credit through programming serving the general audience as long as the programming held elements of educational value for children. Of the 48 stations studied, 52% did not seek credit under this category. Stations that did claim that their general programming consisted of educational value for children aired an average of 2.9 hours of such programming weekly. Another finding indicated that only 16% of programming targeted a specific age group. Also, of the 48 stations studied, only four produced local educational programming for children. Also, 54% of the stations claimed license renewal credit through short-segment programming such as vignettes and public service announcements. Moreover, there was a reporting average of 4.1 claims of non-broadcast efforts that supported children's learning; however, only 12% were deemed valid under the Act. Lastly, 71% of stations complied with the minimum reporting criteria creating the absence of standardization of claim reporting (Kunkel & Canepa, 1994).

Kunkel and Canepa's (1994) investigation showed an insignificant improvement in the number and quality of children's television programming. Additionally, the lack of consistency and standardization in claim reporting could not accurately establish the validity of the data. In other words, these findings simply reflected how broadcasters interpreted the policy.

Kunkel and Canepa (1994) contended that broadcasters had enough time to implement changes to produce more and better programming for kids; yet, broadcasters did not believe the amount of time that had passed was sufficient. This disagreement

suggested a need for policy makers to rethink the timeframe of evaluation and accountability especially if the goal is for stations to create and produce more quality shows. Also, the FCC's policy framework needed to address the issue of program air distribution and the need to target a specific age group for programs (Kunkel & Canepa, 1994). This study's findings were catalysts to FCC's announcement of changing its policy framework to reflect a stronger interpretation of the Act's requirements.

There is a pattern of inexplicit policies, guidelines, frameworks as well as vague language regarding the FCC and the Children's Television Act of 1990. Neff (1994), for example, noted that what the policy makers meant by "informational and educational programming" may have not been clear to the broadcasters. Neff attributed the broadcasters' seemingly lack of compliance to the vague language put forth in the Act. For instance, she stated that broadcasters complained about the language of the Act, particularly, what was meant by educational and informational programming and they were, therefore, unsure about how to adhere to this requirement. According to Neff, the FCC realized that the vague language may have attributed to the insignificant improvements in children programming, and the Commission proposed requirements that specifically address the amount and type of programming that would meet the Act's criteria.

Amendment to the Children's Television Act

In 1996, the FCC added a new regulation under the Children's Television Act of 1990 quantifying the amount of educational and informational programming required for broadcasters' license renewal, 47 C.F.R. §73.671(e) (FCC, 1996). This new guideline, the Three-Hour Rule, ordered broadcasters to air at least three hours of educational

children's shows per week for guaranteed license renewal. This rule also specifies a timeline guideline of when the shows must air, between 7am and 10pm.

Just as important, the Three-Hour Rule also added some clarity to what was meant by "educational and informational programming" (Jordan, 2004). According to Jordan, policy makers' original intent was for broadcasters to provide educational programming that focused on pure academic subject areas such as math, science, and language arts. However, the broadcasting industry pushed to have a broader definition of educational and informational programming that would also address social and emotional development. The FCC allowed for the broader definition in fear of complaints of First Amendment rights from the broadcasting industry. Hence, the FCC defined "educational and informational programming" as any programming that addressed the educational and informational needs including the need for social and emotional development of children up to 16 years of age.

Effectiveness of the 3-hour rule. In two studies, Jordan (2004) evaluated sample programs as well as the industry's perspectives of marketplace factors as they relate to the implementation of the 3-hour rule. The first study focused on analyzing the content of 1999-2000 television programming for educational and informational elements. The second study qualitatively explored the views of the industry regarding economic factors on educational programming.

The first study evaluated children shows aired from 1999-2000 in a large market (Jordan, 2004). The 10 participating stations representing big, small, and independent stations were PAX, ABC, FOX, WB, CBS, UPN, NBC, Home Shopping Network and two independently owned stations. From the stations themselves, Jordan obtained

listings of children's educational programming that counted towards the 3-hour minimum requirement; each show was at least 30 minutes long. Jordan supplemented this information with the stations' quarterly reports to the FCC. A network's programs came from three sources: (a) network provided affiliate stations with programming that meets the 3-hour minimum requirement, (b) the station produced its own program/s, and (c) syndication, in which a station created the program and sold it to other stations in exchange for advertising time. The study focused on a total of forty-one programs, which were evaluated for origination and for the specific educational lessons that they each offered.

Jordan (2004) found that every station except one aired at least 3 hours of children's educational programming. Programs from the larger networks originated within their network company whereas programs from the smaller and independent networks were mostly syndicated. Approximately 45% of the shows' central lesson was aimed at social/emotional development, 41% focused on teaching traditional academics, 4.4% aimed at physical well-being and health as their educational focus, and 7.4% of the stations' episodes combined lessons on academic and social development, and health. Significant findings indicated that most of the smaller and independent stations focused on traditional academic-oriented programming whereas larger networks' educational programming centered on social/emotional growth.

The second study explored the industry's views on children's programming. Jordan (2004) conducted open-ended interviews with four network executives, 13 producers, and five educational consultants. The network executives believed that FCC's mandate changed the scene of children's television programming; yet, producers and

consultants thought that the mandate did not significantly change children's programming. Some producers and consultants, for example, commented that the quality of their programming had too much focus on social development and not enough focus on pure academics.

Regarding perspectives on economics concerning children's programming, most broadcasters stated that producing and airing children's shows are very costly and at the same time, they do not generate profit or revenue (Jordan, 2004). Major broadcasters also complained that they are competing with cable and public broadcasting stations for audience; yet, the broadcasters stated that there is no active promotion of children's programming due to, for example, scheduling. Additionally, advertisers apparently have been noted to be disinterested overall in children's programming. Producers also mentioned that unless the program is tied to selling products and merchandise, more than likely, the children's show will not be a financial success.

The results from these two studies offered some insight to the effectiveness of the 3-hour rule and the manner in which some people interpreted this policy (Jordan, 2004). However, there were a few limitations to these studies. For instance, she had interviewed major network executives, but her study could have provided more insight from the executives of the smaller networks and independent stations, which tended to focus more on the cognitive development of children. Also, the issues of cost and profit that are hindering networks from airing more quality children programs needs further study in hopes to finding viable solutions. The significant finding that the major networks primarily focus their educational lessons on social/emotional development implies the need for further research on children's learning of prosocial television content.

According to Jordan, until further study is done in studying program content, it is difficult to determine whether policy made a difference in quality programming for kids. She stated that even though almost every station met compliance to the new regulation, it is still unclear if programming is effectively meeting the needs of children.

The Learning Debate

According to Graves (1976), children watch more television than they participate in any other activity with the exception of sleeping. Thirteen years later, Hutson et al. (1989) made the same claim. More recently, it has been found that the number of hours continue to grow in spite of the American Academy of Pediatrics' s recommendation that children aged 2 and over should not be exposed to more than 2 hours of television per day (Richert et al., 2011). Regardless, many children watch more than the recommended amount of television. In fact, there is research demonstrating that low-income families and children of color heavily rely on television for information (Greenberg, 1986). Even countries such as Spain, India, and the United Kingdom consider television as an educational resource, teaching children socialization and basic academic skills (Moran, 2006). Given this information, Hutson et al. (1989) described television as having the huge potential to educate youth by increasing cognitive and social skills. They described shows such as *Sesame Street* and *Mister Rogers's Neighborhood* as pioneers in children's educational programming. In fact, Stein and Friedrich (1975) found that *Mister Rogers' Neighborhood* strengthened imaginative play, social, and task skills. In another study, Bogatz and Ball (1971) found that children learned the skills taught through *Sesame Street* episodes. However, as much as there is research supporting television as an educational tool, there is just as much research demonstrating television's ineffectiveness

in developing children's social and academic skills. This section focuses on the learning debate on television as a quality resource of education and information for children.

Social Skills Development

According to some researchers, television directly or indirectly influences children's social development. For example, Hutson et al. (1989) stated that television teaches children social skills, behavior, and social grouping. Cole, Labin, and del Rocio Galarzo (2008) further noted that children could benefit from television that taught children how to respect various cultural groups.

In contrast to the above researchers and the Calvert, Kotler, Kuhn, and Riboli's (2004) study, which will be mentioned later, Mar et al. (2010) found that television was a weak predictor of social skills development. In fact, when compared to other forms of media, these researchers found that children's books and children's movies, not television, are significant predictors of social skills development. There findings came from a study of 55 parents, who completed measures that assessed the children's exposure to media. The sample also included 55 children, who completed a measure that assessed their theory-of-mind development.

Unfortunately, a limitation to Mar et al. (2010) study is that there was no exploration of factors or features of books and movies explaining their role in contributing to what they coined as theory-of-mind development. Likewise, there was no investigation as to the reasons or factors that cause television programming to have an insignificant role in children's theory-of-mind development. Another limitation is that most of the participants were female and further study is needed to determine gender differences on social development. The authors of this study also recognized other

limitations; data came from indirect sources and the study did not consider that children may have been exposed to media in other settings such as day care or school.

Dumlao (2003) added insight to the question of whether television impacts children's social development. Dumlao explored viewer interpretations of conflict portrayed in television programming by focusing on communication patterns of families and variables of conflict. Her research found that youth base their interpretations of conflict in television programs primarily on the content of the program and less within life contexts. Dumlao confirmed that cognitive processing can exist with viewing programs; however, her findings imply the need for parents and educators to assist students with relating program content within real-life contexts.

Related to Dumlao's (2003) findings, researchers such as Samaniego and Pascual (2007) contended that television does positively influence the development of children's social skills and behavior. Focusing on the narrative (story) form of programming, these authors studied the implicit and explicit values and behaviors seen in programming and the connection of these values and behaviors to already existing values and belief system of young adolescents. Their study is based on the assumption that learning social skills and behavior does not occur from watching a television episode alone as Dumlao (2003) suggested; social skill development occurs when the child relates the content of a prosocial program to their life. They asserted that this is due to people's use of associative thinking as opposed to rational or logical thinking when viewing television. Samaniego and Pascual (2007) also advocated for parents and teachers to aide children in understanding the social cues and learning values presented in programming. In fact,

they further stated that other researchers have found that the habits of families with mass media are directly linked to performance in school.

Samaniego and Pascual (2007) viewed television as having three aspects as an educator: (a) program contents, (b) use of language, and (c) medium. There are ample case studies of how content reflecting negative and positive behaviors have influenced the behaviors of children. For instance, Bryant and Zillman (2002) stated that people who frequently watch violence on television have a stronger tendency to participate in violent behavior. At the same time, another study found that when program content consists of plenty of positive behaviors that may also positively shape the behavior of people (Raffa, 1983). The language used in program content also motivates learning. As a medium for information, television has the potential to support student learning.

Cognitive Development

Over the years, researchers have conducted numerous studies on the impact of television on children's learning. Studying the impact of the Children's Television Act of 1990, Calvert, Kotler, Kuhl, and Riboli (2001) examined the learning of second through sixth graders who watched children's programming. The 141 participating students, representing two public schools in the Washington District of Columbia Metropolitan Area, watched 16 unpopular and popular programs that were aired on four major broadcasting networks (NBC, ABC, FOX, and CBS) and on Nickelodeon and Public Broadcasting Station (PBS). Children were split into small groups, who watched two shows on different days in their classroom, and the participants were given access to comic books for distraction. After viewing each show, children were given a measure using Likert scale items that assessed their appeal to the show and measures that

contained explicit and implicit research-developed, multiple-choice questions that assessed what they learned from the content of the program. Researchers also asked the participants to sequence the main story plot elements of each episode assessing their ability to organize and integrate information from the programs.

Results from Calvert et al.'s 2001 study demonstrated that prosocial (social/emotional development) programs were more favored than academic programs by children. To clarify this finding, younger children versus older children preferred these types of shows and girls versus boys enjoyed these shows more. Also, children preferred the popular, prosocial shows from the larger networks compared to those aired on PBS or Nickelodeon. Regarding academic-oriented shows, there were no significant differences in appeal found.

When analyzing data on student comprehension of the program content, Calvert et al. (2001) found just as interesting results. They found that students were able to correctly respond correctly to explicit questions of more popular shows, and they found that older children versus younger children answered the explicit questions with more accuracy. Also, in general, students understood the explicit information of programs equally between the major networks and the two non-major networks. For programs that aimed at prosocial development, children understood the information more from the two non-major networks than from the major networks. For programs that aimed more at cognitive development, children understood the content more from the more popular programs independent of the type of network.

Comparable results were found when analyzing the data from the measures that tested implicit knowledge of content. Older children understood implicit information

from program content better than younger children, and evidence showed that comprehension of implicit information was better understood from prosocial versus academic-oriented programming (Calvert et al., 2001). Data also found that students better understood prosocial programming's implicit information on bigger networks compared to the PBS or Nickelodeon; researchers did not find any such variance with regards to academically-oriented programming.

When analyzing data from picture sequencing, Calvert et al. (2004) found similar results. For instance, older children were able to correctly sequence a program's content better than younger children. Additionally, children were able to correctly sequence more prosocial programs than academically-oriented programs. Children were also able to correctly sequence popular, prosocial programs than unpopular, prosocial programs; there were no such differences for academic programs. A surprise piece of data highlighted that students were able to accurately sequence the content of unpopular shows versus popular shows on the major networks.

Calvert et al. (2004) results confirmed that children understood prosocial programming more than academically-oriented programming. Hence, the participants understood the content more from the major networks and they preferred the prosocial programs from the major networks compared to those on the smaller networks.

These data provided valuable information regarding the influence and effectiveness of programming on children's learning; however, the studies do have some limitations. For instance, they recognized that older children may have comprehended program content more due to their more advanced cognitive abilities. Related to this issue, there was no mention of whether the measures though testing for the same content

contained questions that were developmentally age-appropriate for the different age groups. Also, the study did not mention the attention distracter, the magazine, and whether the possible differences in attention span between younger and older children played a factor in the varying data that assessed comprehension. Attention is a factor in learning. As Linebarger and Piotrowski (2010) stated, keeping attention and interest to televised stimuli while blocking out distracters is essential to learning. So, the questions lies whether or not the programs used in the study kept the attention of the students, particularly the younger ones, enough for learning to occur. Also, the researchers only sampled students from two public schools in one localized area; there findings, though informative, may not, therefore, be easily generalized. Additionally, there was no mention of the student academic composition; for example, there was no specification of students who were gifted, who had special needs, and so forth. Such information may have provided more insight in the discussion of results.

Abelman's (2004) study specifically illustrated the importance of considering students' abilities and skill level when analyzing their level of comprehension of program content. He found that gifted and talented students demonstrated higher level of program content understanding compared to those who were not labeled as gifted and talented. Furthermore, overall, television aided the skill of comprehension; however, labeled students who were considered high consumers of television still demonstrated higher levels of comprehension compared to the non-gifted. Although his study was limited in that the study only contained second graders from suburban and semirural areas and that the assessment was conducted in a testing setting that did not mimic the typical viewing

experience, his study provided insight into student ability level and visual literacy. The study implies the need for more research in this area.

Anderson, Hutson, Schmitt, Linebarger, and Wright (2001a) conducted a longitudinal study on the impact of television on students' cognitive development regardless of skill and ability level. They found that the students who watched more television performed better in school. Samaniego and Pascual (2007) also asserted that in spite of some studies supporting the negative correlation between the number of hours watched and academic achievement, the outcomes vary extensively depending on whether or not parents are involved in helping their children make sense of the program's content.

Corroborating this research is the assertion that television encourages the learning of visual symbols, images, skills, and attitudes. At the same time, some disadvantages such as immediate feedback, meaning interpretation, and comprehension of content were also noted in Samaniego and Pascual's (2007) study. As mentioned above, research has shown that these disadvantages can be addressed if teachers and parents were involved in aiding students in understanding program content.

Some research specifically studied children's academic achievement stemming from watching educational programming. Anderson et al. (2001a) conducted what they referred to as the Recontact Study, which studied the long-term effect of preschool educational programming on 491 high school students. Data came from diaries on preschool program viewing and from students' self-reported high school grades as well as their transcripts. Results found that there were significant positive relationships between viewing educational shows at age five and high school grades in math, English, and

science. According to their study, *Sesame Street* was most connected to positive enduring academic results. Their study implied the possibility of programming encouraging students to pursue academics and therefore, succeed through the schooling years.

In fact, a June 7, 2015 *Washington Post* article by Tankersley referred to a study done by Kearney and Levine, which also found that *Sesame Street* continues to provide a lasting positive academic impact. Kearney and Levine's study showed that students, particularly African-American boys in disadvantaged areas, were likely to remain on grade level due to their viewing of *Sesame Street*. They attributed the show's success to its tie to school curricula and to its program format, which set lessons in a narrative context.

Penuel et al.'s (2011) study findings also supported the use of television programs as a supplement to instruction. The basis of their study came from findings from other researchers such as Linebarger and Piotrowki (2010), whose own studies linked reading strategies used by television shows to fostering reading skills. Penuel et al. (2011) also acknowledged other research (Fisch, 2004) that has found that children's attention to shows' educational content is sustained because of the connection of reading tasks to program events and characters.

Penuel et al.'s (2011) study aimed to determine whether educational television programming can improve preschoolers' reading skills. Their research specifically examined the impact the television shows, *SuperWHY!*, *Sesame Street*, and *Between the Lions*, on the literacy development of preschoolers of low-income families. This study had a sample population of 436 preschoolers and 80 preschool teachers from San

Francisco and New York. A treatment and a control group had no significant differences in regards to mother's education level, book number at home, language spoken at home, poverty level, mean age, ethnicity, and gender. The treatment group received teacher coaching and had to implement the full 10 weeks of the program, which included showing video clips, allowing students to play the online games that relate to the shows, and administering assignments that reinforced lessons taught by the episodes. Treatment group teachers found that they were able to increase student engagement around the shows' literacy skills. This increased engagement led to increased exposure to skills across different formats (videos, computers, discussion, etc.), which led to a positive impact on student performance.

Though their study demonstrated positive outcomes of a media-rich intervention program on the progress of students, Penuel et al. (2011) recognized several limitations to their study. This included the study's absence of distinction of the specific curriculum elements that had the greatest impact on learning. Findings may be generalizable for similar metropolitan areas, but they may not be generalizable for more rural areas because of, perhaps, the assumption that technology and media is more available and apt to be used in metropolitan areas compared to rural areas. Also, there were issues with reliability and validity; for instance, when coaches were not able to directly observe the implementation of the curricula, they had to rely on teacher reports. In spite of these limitations, the research team clearly found positive results in student literacy outcomes with the use of public media curriculum supplement.

In contrast to Penuel et al. (2011) and Anderson et al.'s (2001a) studies, other researchers have found that television has a negative impact on student achievement.

According to Shin (2004), there are two schools of thought regarding television and academic achievement: (a) stimulation, which means that children learn from educational programming and (b) reduction, which views television as a medium that restrains learning. Shin stated that there are four over-arching hypotheses developed from these two theories. The learning and information-processing hypotheses support the stimulation theory. The time-displacement hypothesis is a reduction hypothesis that contends that television replaces the time when academic activities/tasks could be occurring (e.g., reading). The mental-effort and passivity hypotheses suggest that children are passive when viewing television. The attention and arousal hypotheses suggest that television affects students' attentiveness and promotes impulsive behaviors, which negatively impact learning.

Using these four hypotheses, Shin (2004) studied the influence of television viewing on academic success. Shin (2004) used data from the Child Development Supplement (CDS). The population sample consisted of 1, 203 children with the age range 6-13, approximately half of the sample were male, the other half female, and about half of the sample were Caucasian and the other half were African American.

Shin (2004) asked parents to report on the student's activities of one 24-hour weekday and one 24-hour weekend day. Parents of children reported data on their child's activities, namely leisure reading, completing homework/studying, and watching television. Parent reports included the time activity began and ended, people around or involved in activity, activity location, and any other activities that the child was doing at the same time. Parents completed three-point rating scales that measured their child's

impulsive behaviors. Students were also administered the Woodcock-Johnson Revised Tests of Achievement to measure academic success.

Shin's (2004) study findings indicated that the more time children spent watching television programs, the less time they had to do school-related work and leisure reading. Hence, there was less academic success. Shin's study also found that television viewing increased impulsive behaviors, leading eventually to poor academic achievement.

Shin's (2004) study provided more evidence of television's negative influence on learning in contrast to Anderson et al.'s 1991 study. Shin did make a noteworthy clarification stating that the content of the programs viewed could be related to the low academic achievement data. Shin recognized that her study did not specify the programs that the children watched; hence, further studies should incorporate the exploration of different program contents as they relate to student success.

Program Elements

According to Watkins (1985), much effort is required to understand television's symbol system. He asserted that learning how to watch is a process involving mostly, learning different program formats. Watkins suggested that this requires much cognitive experience and sophistication, which, then, exercises children's cognitive skills in learning and deciphering television's symbol system. For example, they learn that visual and audio elements are not only stimulating, these features also represent information that is meaningful. Though their focus was not on music on television shows, Register, Darrow, Standley, and Swedberg (2007) found significant positive results on the use of music as an intervention for students with a reading disability. This finding supports the idea that sound, such as song and music, as well as visual television program elements

can aid in fostering comprehension of not only the show's story line and educational content, but can directly and positively impact reading growth. Citing Huston and Wright (1989), Linebarger, Kosanic, Greenwood, and Doku (2004) agreed that children infuse a variety of stimuli to create meaning from what they watch on television. Watkins argued that television can enhance cognitive abilities and further stated that the combination of time spent viewing television and the amount of repetition leads to the guaranteed learning of program messages. Linebarger et al. (2004) added that television's use of visual and sound features provide the structure necessary to understand program content. These authors asserted that there is an improvement to comprehension when these structures are utilized for student focal attention.

To help address the question of television effectiveness with some discourse on program content, Samaniego and Pascual (2007) highlighted the benefits of the use of narratives in television programming. They stated that narratives about real life and about fictional stories support the cognitive skills and thought processes taught in school. Narratives also help people in interpreting values and life, in general. Since television is believed to be a valuable tool for educating children, Samaniego and Pascual (2007) stated that this means that there is a critical need for an "educational intervention designed to re-contextualize the values transmitted through television" (p. 10).

Samaniego and Pascual (2007) suggested using Schwartz and Bilsky's model framework to be used by educators to help students analyze and conceptualize values taught through television programming and to promote desired values. Samaniego and Pascual suggested related strategies in teaching students how to watch television: (a) emphasizing and deciphering program messages, (b) comprehension of material, and (c)

discourse and relating to values. These authors went further by stating that explicitly teaching values through media such as television and media can be beneficial to students' studies across subject areas and in encouraging interdisciplinary studies.

Other researchers have studied program type and strategies that could be used to foster learning through educational television. Linebarger and Piotrowski (2010) evaluated a group of learning interventions believed to support literacy skills taught through the two different program types, narrative and expository. In their first study, researchers identified and studied television programs' effective literacy-promoting strategies. In their second study, these researchers used learning strategies and program types to forecast program-specific vocabulary and comprehension gains.

The first study sampled six half-hour Public Broadcasting Service (PBS) programs (Linebarger & Piotrowski, 2010). The target age group for these programs was 7- to 9-year-old children. The researchers chose an equal amount of narrative (story-type content) and expository (content that focuses on multiple vignettes, compare-contrast, listing, or cause and effect) program types. They, then, coded several key elements representing each strategy. For instance, to determine the use of a literacy environment within an episode, the character's print use, the program's onscreen print use, and positive comments about print were coded.

Results from this study indicated that despite the program type, a literacy environment existed at varying levels in each of the six programs; one particular show specifically geared towards fostering reading carried the most evidence for having a literacy environment (Linebarger & Piotrowski, 2010). Regarding comprehension strategies, narrative program types used more strategies of comprehension compared to

expository program types. Results from this study also showed that expositories had more vocabulary strategies.

Seventy-one second graders and third graders from four Title 1 schools in two Midwestern cities participated in Linebarger and Piotrowski's (2010) second study. This sample consisted of 54% of children reading below grade level, 56% African American students, and 44% students who were learning English as a second language. Researchers assessed students' baseline literacy skills by having students complete pretest assessments. In groups of two to three, students viewed one episode over the course of 12 testing session days. Researchers redirected students to viewing the episode as necessary and after each viewing, students were tested for word recognition and knowledge of definitions. Researchers administered literal and inferential questions about program content to test for comprehension.

Based on the first study's findings, Linebarger and Piotrowski (2010) predicted that students would comprehend better from narrative program types compared to expository program types. Results from the second study confirmed their hypothesis. However, their second prediction was unfounded; students would not make more vocabulary gains when viewing expository programs. Instead, vocabulary knowledge gains were higher after viewing narratives.

Linebarger and Piotrowski (2010) confirmed the importance of considering program type and learning strategies when understanding how students gain knowledge from television programming. Their studies demonstrated that narrative program types make a stronger impact on a child's vocabulary knowledge and overall comprehension of program content. This implies the need to rethink how content can be presented in a

more effective manner within expository programs and the need to teach children how to learn when information is presented in non-narrative form. One noteworthy limitation of the second study is that the sample composition did not reflect the general student population; so, results of this study could not be generalized. Also, since 54% of the participating students had reading difficulties, then, results needed to consider that since these students read below grade level it could have impacted the post-test scores.

Programs that focus on critical thinking skills and implications for teaching strategies. There have been some studies about television influencing the development of children's creative skills. Anderson et al. (2001b) studied the relationship between high school students' participation in creative activities and television viewing. Using the verbal ideational fluency test, Anderson et al. assessed students' divergent or creative thinking. Anderson et al. also measured student participation in creative activities using student interviews. The Alternate Uses of an Object Test also assessed students' ability to think of different purposes for specific objects.

Anderson et al.'s (2001b) comprehensive study found that teens who viewed many educational programs in pre-school partook in more creative activities and enrolled in more art classes than students who did not view as many informational programs. As Anderson and his team noted, their study implies that program content, in this case, preschool content, is a significant factor in predicting the development of a child's creative skills and interests.

Additionally, Lavoie (1995) argued the television programming, such as shows aimed at science inquiry, could strengthen problem-solving skills provided that educators supplement with meaningful learning strategies. He stated that the objective is to "raise

students' level of information processing relative to the doing and the conceptualizing of science while engaged in their favorite pastime—watching TV" (p. 202). As illustrated earlier, Anderson et al. (2001b) also demonstrated the impact of television viewing on children's ability to be creative, the highest level skill attainable according to Bloom's Taxonomy.

There is an imperative need for children to develop and exercise more complex cognitive skills. Lavoie (1995) stated that it is more challenging and more imperative for children to make logical decisions, conceptualize information, and problem solve than in our past. Bazeli and Robinson (1997) added that the need for critical thinking will become even more imperative in the future. They argue that since the world we live in is a visual world, it is essential that students learn how to critically analyze what they view. They further state that when children conduct visual analyses, they increase their motivation to learn and think more critically. That is, students are more confident and optimistic when faced with problem solving challenges. For instance, Bazeli and Robinson suggest that learning to visually analyze short segments of television programs and videos as part of the school curriculum can increase a student's perception, discrimination, and construal skills. They learn not only content, but they also learn about their own thinking and learning process.

Parrish, Frager, and Thompson (1982) supported Bazeli and Robinson's (1997) viewpoint and stated that because children spend more time watching television than in the classroom, school should intently teach children how to critically view television. They further contend that educators can use television to teach students how to critically read and think. Cortes and Richardson (1983) specifically named seven teaching

strategies that can be used to develop higher thinking skills when airing television programs: (a) analyze the author's viewpoint (values and biases), (b) study logic behind arguments or decisions, (c) evaluate the subject/content of program, (d) analyze sources of topic, (e) make connections to life/future, and (f) examination of own values, beliefs. To illustrate, "Get the Math" is an example of a proven television program that teaches children algebra in real-life contexts and according to the National Council of Teacher of Mathematics, the show strengthens students' logical and reasoning skills (Rebora, 2011).

Television for Diverse Learners

Despite the growing need to prepare students to enter the global workforce, school systems cannot ignore the need for strong support for students who struggle, particularly those who have been identified as learning disabled. In fact, in their discussion on a model involving computer-mediated instruction, Seok, DaCosta, Kinsell, Poggio, and Meyen (2010) stated that society's high expectations of students with learning disabilities call for a need for instructional alternative choices to support their success.

Conceptualizing Learning Disabilities and Special Education

Understanding the learning disability would help generate strategies and ideas in fostering academic development in special populations. In exploring the definition of learning disabled, Johnson, Humphrey, Mellard, Woods, and Swanson (2010) conducted a meta-analysis and determined that persons with a specific learning disability have significant cognitive processing deficits compared to their typically performing peers. Citing Hudson, High, and Otaiba (2007), Seok et al. (2010) made reference to the left and

right brain hemispheres stating that students with a specific learning disability in reading show less activation in the brain areas that are less functioning while these students show more activation in other brain areas. Seok et al. (2010) suggested that developing both brain hemispheres could help students with disabilities learn better.

A specific learning disability as defined by IDEA, 20 U.S.C. §1401 (30) (2004), is a

> . . . disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations.

The following conditions are included the IDEA, 20 U.S.C. §1401 (30) (2004), definition for a specific learning disability: "perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia." IDEA's definition of a specific learning disability, however, does not include "a learning problem that is primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage" 20 U.S.C. §1401 (30).

My study acknowledges that the term 'reading disability' is a broad concept and therefore, this notion deserves a closer examination of possible meanings. Reading disabilities theories fall within three main paradigms: (a) the neuropsychological, (b) the applied behavior analysis, and (c) the information processing approach (Torgesen, 1986). Theory conceptualizing learning disabilities using the relationship between the brain and behavior suggest that a brain malfunction or neurological impairment causes intellectual disabilities. The applied behavior analysis suggests that learning difficulties are a result of learning improperly, specifically learning wrong responses to instruction or the absence of correct practice.

The focus of the information processing paradigm is deficiency in cognitive processes. In the area of reading difficulties, this paradigm's theory on verbal deficiencies, namely the verbal deficit theory, specifically looks at language and semantics to understand reading difficulties (Torgesen, 1986). This theory focuses on practice and direct instruction when reading in context as recommendations for remediation. Martin et al. (2008) also recognized that learning-disabilities involve information processing deficits and also "brain differences underlying reading disabilities are complex" (p. 115). Moreover, students exhibiting reading difficulty struggle with language processing and other deficiencies such as those related to attention and the central-processing disorders of working memory and temporal sequencing. Martin et al. (2008) added that reading differences can be attributed to biological reasons and to life experiences.

IDEA, 20 U.S.C. §1401 (29) (2004), defines special education as "specially designed instruction, at no cost to parents, to meet the unique needs of a child with a disability, including (A) instruction conducted in the classroom, in the home, in hospitals and institutions, and in other settings." As mentioned earlier, IDEA's goal is to protect the rights of people with disabilities through supporting their educational growth. Hence, Congress established the following objectives of IDEA, 20 U.S.C. §1400(d): (a) assistance given to state and local educational service agencies, (b) implementation support of early intervention services, (c) assessment of efforts through IDEA. One of the objectives included the federal government providing educators and parents with the necessary tools to help foster student progress, including technology and media services. IDEA also aims to provide students with disabilities a free and appropriate education

(FAPE). However, as mentioned earlier, a more clear definition of FAPE is necessary to include research-based interventions and progress tracking to meet the needs of special populations (Crockett & Yell, 2008).

Reading Strategy/Intervention Studies Focused on Students with Reading Disabilities

Swanson (1999) conducted a meta-analysis of studies on intervention outcomes for people with reading disabilities. In his review of literature for his study, Swanson (1999) found that there are two practical approaches of reading interventions. The first approach focused on instruction emphasizing word skills and phonological awareness. The other approach focused on teaching metacognitive skills involved with reading such as purpose and meaning of language. His meta-analysis acknowledged research that theorizes that students with learning disabilities are of normal intellect but encounter information-processing difficulties. He specified that processing problems exist in phonological processing at the word-recognition point. Hence, Swanson's sample research focused on populations who had deficits in the areas of word recognition and overall reading comprehension and the research used in his meta-analysis was research that measured outcomes on word recognition and reading comprehension.

Swanson (1999) focused on studying the effectiveness of strategy instruction, direct instruction, and a combination of both types of instruction on word recognition and comprehension. Results of Swanson's meta-analysis found that for word recognition, sequencing, segmentation, and advanced organizers improved treatment outcomes and for comprehension, directed response and questioning, management of difficulty of task-

processing demands, elaboration, teacher modeling, group instruction, and strategy cues enhanced treatment results.

Swanson's (1999) findings provided strong implications for effective practices to address the needs of students with specific learning disabilities in reading. Swanson found that improved reading results when focused on word recognition instruction occurred using several interventions. One such intervention is sequencing, which involves the teacher matching the task difficulty to the student's present ability and providing step-by-step prompts with eventual fading during the task. Relatedly, segmentation occurs when the teacher segments as well as synthesizes components of a targeted skill. Advanced organizers have also proven to be effective with word recognition instruction when teachers emphasize the pertinent information, provide prior knowledge about the task, and are explicit with the goals of the lesson. Swanson also discovered that improved reading results when focused on comprehension happened when using other specific interventions. The first requires students to engage in discussion with each other and the teacher in a question-answer format or in a Socratic discussion mode. The second intervention is similar to sequencing, in which the level of task difficulty is controlled by the teacher. In this type of intervention, the teacher models the task and sequences the tasks involved or provides a task analysis. Another proven intervention is elaboration, in which the teacher explains the concepts and steps and where there is repetition within or redundancy of text. Teacher modeling of steps and processes is another effective intervention. Small group instruction with peers was also proven to have improved reading results. Lastly, the provision of 'think alouds' and

explanations of the advantages of using strategies when reading have also proven beneficial to struggling readers.

Swanson's (1999) research was monumental in that it was an analysis of 30 years of research on reading interventions for student with learning disabilities. The above-named interventions had effect sizes that ranged from almost moderate (0.52) to substantial (0.77). Swanson did note that effect sizes could have more of a substantial rating in both areas of word recognition and comprehension if treatments were applied long-term. It is also important to note that Swanson's research discovered that a combination of direct instruction and strategy instruction is very effective for enhancing reading comprehension outcomes whereas direct instruction is very effective for increasing word recognition outcomes. This study also acknowledged that findings could have been influenced by participant descriptions such as the student's intelligence quotient (IQ). For instance, studies whose sample population included people with discrepancies between IQ and reading performance with IQ scores ranging in the high average resulted in smaller effect sizes across interventions compared to studies whose population included people with lower IQ scores.

Gersten et al. (2001) suggested the need to strengthen students' ability to strategically process information and to teach them strategies to become more active readers. They reviewed literature within two categories: a) research that focused on interventions within narrative text and b) research that focused on interventions within expository text. Their findings indicate that strategy instruction with teacher modeling across a variety of reading material advances comprehension performance in both types of text formats. Strategy instruction examples include teaching story mapping or story

grammar for narrative text to increase comprehension and teaching multiple strategies for simultaneous use for expository text.

Berkeley et al. (2010) also conducted a meta-analysis on research studies conducted between 1995 and 2006 on reading comprehension instruction. This meta-analysis examined findings of the following interventions' effectiveness: a) basic reading skills instruction, b) questioning/strategy instruction, and c) text enhancements. The meta-analysis of forty studies found all three of these interventions to be very effective, with the questioning/strategy instruction and text enhancements being the most effective using criterion-referenced measures and with fundamental reading skills instruction and questioning/strategy instruction on norm-referenced tests. The mean effect size in whole was 0.65, which the research team recognized as very similar to Swanson's (1999) overall effect size of 0.72 for his analysis of studies conducted between 1972 and 1997.

Berkeley et al.'s (2010) research was a comprehensive examination of 11 years of research done on reading instruction for the learning disabled. The research team noted that each of these treatments taught students to pay careful attention and think more analytically about the material that they are reading. Additionally, the results of the meta-analysis indicate that these treatments can improve greatly reading skill development in learning disabled students across multiple classroom setting and with varied treatment time periods. Simultaneously, their research also found very little specialized strategy instruction occurring in the general education settings, including inclusive classroom environments. Therefore, implications for practice of this meta-analysis encourage more direct strategy instruction within such settings. Though Berkeley et al.'s (2010) investigation included studies representing students from every

grade level, beginning in kindergarten, one element not accounted for in the study was the factor of teacher efficacy, which could have provided additional insightful information.

Strategy instruction has also proven to have a positive impact on reading progress by the Division for Learning Disabilities and Division for Research of the Council for Exceptional Children. Strategy instruction consists of teacher modeling and instructing decoding, vocabulary, and comprehension skills in the primary grades. This type of instruction requires students to utilize background knowledge when comprehending text, to read a variety of text, and to teach students to self-monitor progress. Strategy instruction has an overall effect size that ranges from 0.82 to 1.13 with student self-questioning having a greatest effect size of 1.33 (Brigham et al., 2007).

The Institute of Education Sciences (IES) created a practice guide to address reading comprehension challenges experienced by students (What Works Clearinghouse, 2010). Though the IES's What Works Clearinghouse practice guide did not specifically address student outcomes of interventions for the special needs populations, the research team believes that their practices are viable recommendations for all special needs populations as they state that there is no verification to think otherwise. In their search for evidence-based practices, the research team found that strategy instruction held the strongest causal relationship to improving reading comprehension in beginning readers. This finding is consistent with the research findings of Swanson (1999), Gersten et al. (2001), Berkeley et al. (2010), and Brigham et al. (2007). The following are strategies that their research recommends: a) predicting or using prior knowledge to assist in constructing meaning, b) questioning about the main ideas during the reading process, c)

visualizing mentally images of what is being read, d) self-clarifying or self-monitoring comprehension, e) inferring essential information using context clues, and f) retelling the main ideas of the reading.

The What Works Clearinghouse published several reports on studies that specifically focused on measuring intervention effectiveness for the learning disabled. In a January 2013 report, What Works Clearinghouse reviewed a study on Same-Language-Subtitling, which is an approach that encourages reading using the karaoke-styling of music videos (What Works Clearinghouse, 2013b). This study worked with a group of 51 students, who received SLS instruction, and a group of 98 students for comparison. Their ages range from 14 to 19 with reading levels ranging from a 2.2 to a 9.4 grade equivalency. Though statistical significance of this study was not reported, the What Works Clearinghouse did find that the group of students who received the treatment scored significantly higher on comprehension posttests than the group of students who did not receive the treatment. Though the Clearinghouse found SLS to be a promising intervention for students with special needs, there was no mention of consideration of SLS students' prior knowledge and exposure to the music videos used in the study. Such knowledge and exposure could have influenced the results of the cloze worksheets used during the task activities of the intervention. Also, though students in the treatment group scored significantly higher than those in the non-treatment group, it is unclear how the SLS treatment encouraged reading progress in different reading contexts.

The What Works Clearinghouse reviewed several other studies that tested the potential of interventions improving reading skills in students with reading disabilities. The Clearinghouse looked at two studies on Peer-Assisted Learning Strategies (PALS), a

highly structured intervention (What Works Clearinghouse, 2013a). Between the two articles, the studies represented twelve schools and sixty students with learning disabilities. When reviewing two studies, the Clearinghouse did find potentially positive effects with this intervention in the area of fluency. Though its review did not find statistically significant effects, it did find a small positive effect.

What Works Clearinghouse (2013d) reviewed one study that tested the impact of Reading Mastery, a direct instruction curriculum that addresses all aspects of reading development including phonics, vocabulary, and comprehension. The study, however, tested the program's impact specifically in the alphabet and comprehension domains. The Clearinghouse noted that there was no statistically significant effect in comprehension domain but that there was only a small effect in the alphabet domain. This review was only of one study, whose population sample included 50% those who are learning disabled and the other 50% having other disabilities such as emotional, behavioral, and other health impairments. Therefore, it is difficult to determine the actual impact that this intervention has on the learning disabled population.

The What Works Clearinghouse (2013c) reviewed a study that measured the usefulness of the Read Naturally Program, which has several program products that commonly focus on fluency and comprehension. The program models reading through taped recordings, students conduct repeat readings themselves of the same passage, answer the passage's comprehension questions, and monitor their own progress. The What Works Clearinghouse reported that there were no statistically significant findings that the Read Naturally Program improves fluency. However, results from this sole study cannot be generalized as the study occurred at one school only and the sample population

was a group of only students who were identified as having dyslexia and no other reading deficits.

Teaching phonics to strengthen students' phonemic awareness is another proven intervention. Using whole language instruction as a comparison group, 66 treatment statistical comparisons of 38 studies found that phonics instruction had an effect size of 0.46 while whole language had an effect size of 0.00 (Pullen & Lloyd, 2008). Phonics should be systematic instruction that includes letter-sound correspondences, allow practice with reading text, teach at student's level and extend learning to include more complicated, multi-syllabic words, including those with affixes.

So, the question remains as to how the broadcasting industry can address the issue of supporting reading progress in the learning disabled. Authors such as Hargis and Gickling (1975) specifically studied television programming and its influence on the learning of students with specific learning disabilities. These researchers conducted a study on the effectiveness of 'The Electric Company' in teaching vocabulary to students with mild learning disabilities and found that the show did not make a significant impact on the sample population's ability to learn sight words. Their study's limitation, however, did include the note that the authors tested solely for the vocabulary teaching portion of the show. They question, therefore, if similar results would have been found if they tested for all the lessons of the show. On the other hand, Golos (2010) studied deaf children and found that these children demonstrated an increase in understanding of program vocabulary as American Sign Language video showings increased. His study findings, however, were not generalizable as the sample size was small.

Likewise, other authors have addressed the issue of the use of technology tools that are intended to assist students with special needs. For instance, Behrmann (1994) suggested that multimedia such as video, graphic images, and audio can motivate students to create new and multifaceted ideas. He added that video with more than a linear format can be utilized effectively to help develop understanding and knowledge through mental models. Wade, Boon, and Spencer (2010) explored the use of Kidspiration software on increasing reading comprehension skills of students with learning disabilities. Researchers of this article found that had a positive impact on reading comprehension skills for students with disabilities. Researchers of this article, however, also had a small sample size of only three students. Nonetheless, the results of noted improvement in comprehension skills and the evidence that those skills were retained over a long period of time were noteworthy and significant.

Increasing access to the general education curriculum for students with disabilities can occur in numerous ways. One of the ways that this can be achieved is through Universal Design for Learning (UDL). Jiménez, Graf, and Rose (2007) provided several strategies that vary ways in which content can be presented and taught. Their article does not name specific media examples and their effectiveness; however, it does explain the importance of having a technological infrastructure which involves the use of media.

The above studies acknowledge that not every student receives and processes material the same way. It is, therefore, also suitable to mention Dr. Howard Gardner's multiple intelligence theory, which recognizes that there are different types of intelligences that account for different ways that people can acquire knowledge (Ross, 2011). These different intelligences include: (a) linguistic learners, (b)

logical/mathematical learners, (c) musical/rhythmic learners, (d) visual/spatial learners, (e) bodily/kinesthetic learners, (f) interpersonal learners, (g) intrapersonal learners, and (h) natural learners. With television's present model, television can easily incorporate elements that support the learning of students with dominant logical, rhythmic, spatial, and intrapersonal types of intelligences.

Children's Learning Process of Television Material

Though there is limited research on how students with disabilities learn from television content, some researchers have specifically examined how children, in general, learn from television. Richert et al. (2011) studied the influence of television in rearing healthy children. Their study considered children who do not learn from television and how social interaction impacts learning. The study also considered children who do learn from television in order to inform others on what constitutes effective programming.

Richert et al. (2011) first looked into researching the learning potential of children 3 years of age and younger. They found that more recent research suggested that this age group is able to cognitively understand and learn from 2D images compared to previous studies that contended that toddlers were unable to learn from 2D images versus from 3D images, e.g. live people. Regarding auditory perception, children in this age group needed social interaction to reinforce their ability to discriminate between phonemes, their ability to learn words, and their ability to imitate. Their research also found that children under nine months of age are unable to understand that television consists of symbolic representation and they, therefore, need to view television as a medium that contains symbols related to real life.

Richert et al. (2011) reviewed research concerning preschoolers and how they learned from televised programs. They found that preschoolers learn from educational programming because the learning content is presented in the context of pretend social interactions or because the program clearly connects its content to the real world.

Several implications stem from a review of their research. First, they asserted that parents and educators should be attentive to the fact that the learning of young toddlers from on screen media is very limited. So, policy makers and product companies should be aware of how media-related products are promoted as educationally beneficial for young toddlers. Finally, this was another study that confirmed that parent and educator involvement increases children's ability to comprehend a program's content as long as explicit connections between the program and real life are made (Richert et al., 2011).

Reeves and Thorson (1986) looked at a number of psychological experiments to examine television viewing and its relationship to memory and cognitive processing. They believed that memory depends on attention and effort, which, in turn, are dependent upon processing strategies as well as program structure. Their discussion on viewing focused on the following: a) stimulus unit size, b) complexity of stimuli, c) time units, d) inter- and intra-stimulus contrasts, and e) content and form, and f) active and passive processing. Interestingly, they determined that less mental exertion was needed to understand complex messages. However, depending on stimulus size, local complex features like scene changes needed more mental effort than local simple features. This finding indicates the involvement of two levels of processing: a) local complex elements may make it difficult to process sensory signals and b) globally simple features involve processing meaning. Their investigation also found that negative and positive scenes

aroused the right and left brain hemispheres, respectively. Their results also indicate that meaning and structure do affect viewers' ability to process information.

Though Mayer did not solely study television's impact on learning outcomes, his idea of multimedia instruction includes educational television programming as a type of multimedia instruction. Mayer (2009) described multimedia instruction as "presentations involving words and pictures that are intended to foster learning" (p. 5). According to Mayer's (2009) cognitive theory of multimedia learning, learning content from multimedia instruction like television involves the cognitive processes of choosing important images and words for processing in visual and working memories, mentally organizing words and images, and synthesizing both visual and verbal depictions. His theory is based on the assumptions that people process visual and auditory information separately, people have a limited ability to process each of these two types of information, and people are actively involved in the process of learning when presented with information from the use of multimedia.

Based on his cognitive theory of multimedia learning and based on his research program covering a span of 20 years, Mayer (2009) built three sets of principles aimed at increasing learner outcomes from the use of multimedia. The first group of principles (coherence, signaling, and redundancy) aims to reduce the amount of unnecessary cognitive processing of the learner. The second group of principles (segmenting, pre-training, and modality) assists the learner in efficiently managing the relevant information presented. Mayer's third set of principles (multimedia, personalization, voice, and image) addresses the issue of organizing and integrating a person's prior knowledge with newly introduced content. These empirically-tested principles represent effect sizes that

ranged from 0.52 to 1.39 with the exception of the image principle, for which Mayer's research found an effect size of 0.22.

Clarity over Learning Debate

Overall, there have been inconsistent findings to research that studied television and its impact on learning. Razel (2001) attempted to bring clarity to past research by conducting a meta-analysis of six studies that specifically linked television viewing to academic achievement. After correlations between viewing amount and academic success were found, the researcher reported these correlations for different viewing time groups separated by age, year, county, and subject. The results of his study found that there is an overall negative relationship between television and academic success. These results are supported by an example from the National Assessment of Educational Progress (NAEP) in the National Center for Education Statistics Reading 2009 report, which stated that there is a poor correlation between reading achievement and amount of television viewing. However, when considering the viewing times and achievement, the research indicated that there existed optimal viewing times where academic success did occur. In other words, viewing television outside the optimal viewing timeframe hinders academic achievement. Also, findings suggested that optimal viewing times differ according to age; nonetheless, each age group demonstrated its own optimal viewing-achievement timeframe. Razel (2001) recognized that the positive correlation between television and academic achievement found with the younger children may be related to program content, which his study did not explore. He, therefore, stated, like some other researchers, that further study about program content and quality is needed in order to gain fuller insight on the relationship between academic achievement and television.

Thompson and Austin (2003) summed up the debate over television programming and learning. They discussed the lack of research on issues of race, socio-economic class, parent control, and peer influence. They also recognized the varying data that suggest two very distinct general findings in determining whether or not learning occurs when viewing programs.

Thompson and Austin (2003) also attempted to bring more solidarity to the varying research findings by stating that research demonstrated that increased, unsupervised television viewing especially in lieu of school-related work can lead to poor academic performance. On the other hand, research demonstrated that meaningful, educational, and supervised television viewing can lead to academic success. For instance, the EDC's Center for Children and Technology's 2004 report stated that television has the ability to support language arts instruction by providing varying interpretations of classic literature and encouraging diverse ways in which readers can respond to material read and viewed. As stated earlier, parents and educators are called once again to take an active role in mediating television watching in order to provide a more meaningful and more educational viewing experience.

Collaboration Between Academia and Broadcasting Industry

Some broadcasters have joined educators in working to make television more educational and meaningful for youth. Jankowski (1986) have described her broadcast group's efforts in seeking collaboration with academia. For instance, she mentioned that CBS held a conference with the Society for the Psychological Study of Social Issues, whose members have often been critics of television. The conference provided a forum for exchange between CBS executives and sociologists and psychologists. Jankowski

stated that CBS was able to share their views and research while learning from others' perspectives as well. In her speech delivered at the Broadcast Education Association Annual Convention, Jankowski (1986) called for such continued collaboration with educators in working to bridge the two worlds of education and broadcasting.

Though collaboration between these two worlds is encouraged and desired, the education world requires more understanding and familiarity with media. For instance, Stein and Prewett (2009) found that teachers desire to incorporate more media-based teaching practices; however, overall, they lack the confidence and the ability to analyze media for instructional purposes. Additionally, Kinzer (2010) stated that about one-third of educators in schools with low poverty schools and about half of teachers in schools with high poverty desire more training in how to effectively use media as instruction. His finding calls for policy makers, schools, and academia to respond to such teachers needs. Stein and Prewett's (2009) research also implies the need for more guidance and resources for teachers to incorporate media within their classrooms as well as the need for collaboration between teachers and academic departments of communication.

Kingsley and Boone (2006) illustrated a proven example of successful incorporation of media within instructional practices. These researchers found that there is a positive correlation between the use of media and achievement of students in social studies classes. Though the researchers studied a limited sample population, researchers found insightful information about the potential of media on learning and called for further study on media's influence on children's knowledge gain.

Clarifying Television's Role in Education

Samaniego and Pascual (2007) believed that television is more than just a medium for information; it is a valuable learning resource. Other researchers as far as three decades ago saw television acting in the role as educator. According to a 2004 report from the EDC's Center for Children and Technology, a 2002 survey found that teachers used television and video more than other instructional tools such as the Internet. The 2004 report also shared that educators perceived television as beneficial in promoting engaging class discussions, reinforcing lessons, increasing motivation and excitement for learning, and accommodating for learning style differences. When comparing television to formal teaching, Hirsh (1977) stated that they each serve "as a powerful socializing agent for children, providing information, images, and reference points which constitute shared experiences" (p. 507). He added that both have a curriculum and they both share the issue of measurement for effectiveness.

Flipped classrooms have recently gained popularity. Brooks (2014) explained that in inverted classes, students receive instruction through video or online tutorials or lectures at home. When students report to their next class, ideally, they mentally work with the material viewed through active engagement in discussion and class tasks. In her research, Brooks learned that overall, students value the learning classroom experiences more after having view tutorials.

Herreid and Schiller (2013) also studied flipped classrooms. They believed the approach's popularity is due to increased internet resources. They agreed that the flipped classroom allows students to learn at their own speed and gives teachers information on student learning styles as well as student challenges. They noted that this model allows

for better use of class time and teachers observe higher levels of student interest and progress.

The flipped classroom, however, has some criticisms. According to Herreid and Schiller (2013), this approach requires students to do their part by viewing the tutorials at home. In addition to not being able to control whether students come prepared with having viewed the online lectures, the lectures themselves must be carefully crafted and requires much time in creating and designing the instruction. Moreover, Brooks (2014) recognized that such a pedagogical model may not be effective for every learner. For instance, a hybrid model in which videos supplement instruction during a class session as opposed to videos being assigned as homework has proven successful to diverse learners. Additionally, according to Herreid and Schiller (2013), the use of instructional podcasts, which are audio and visual digitally formatted files, during class time, positively impacts student achievement, behavior, and attitudes.

Regardless of whether media is used at home, at school, or both, media use has proven to demonstrate value in enhancing the learning experiences of students. With increased internet availability and resources, schools are finding ways in incorporating technology to provide more active learning experiences for students. Project-based learning, for instance, allows students to actively engage with content material in order to examine and solve real world problems (Blumenfeld et al., 1991). Project-based learning allows students to design and create their own products, extending their learning of the material in ways that contribute to the solving of world problems and in essence, affecting and changing the world in which they live.

In 1986, Jankowski, at that time, president of the major network, CBS/Broadcast Group, delivered a speech at the Broadcast Education Association Annual Convention in Texas about education and television. She focused her speech on demystifying television and its role in educating children. For instance, as stated earlier, Hirsh (1977) had claimed that television, like school, has a curriculum. However, Jankowski (1986) asserted that the roles of school and television have been highly misunderstood with people stating that television is the major force in children's learning. Professors, like Hirsh, stated that television has a curriculum and that the television's curriculum is the first curriculum and the school's curriculum is the second curriculum. According to Jankowski, the myth was primarily based on the fact that children spend greater amount of hours watching television than in school. Jankowski refuted this myth by stating that to conclude that television is a greater source of education than school because of time is absurd and stated that comparing very different events based on an amount of hours produces pointless conclusions.

Jankowski (1986) stated that schooling is a formal institution where learning occurs. In schools, students go through courses in a sequential manner, and attendance at schools is ordered by the government. After secondary school, students move on to higher education or pursue career interests. Watching television, on the other hand, is not a formal educational system. Viewing programs are not mandated by the government, and television viewing occurs during spare time.

Jankowski's (1986) point was that television does not have or is not a curriculum nor is it a school. However, she stated that although television was not created as a tool

to teach, television has much educational worth to provide depending on how it is utilized.

There are a number of studies supporting the use of media as effective educational resources when educators and parents mediate the learning process. Bittman, Rutherford, Brown, and Unsworth (2011), for example, investigated children's literacy development from the use of media. Authors used data from the Longitudinal Study of Australian Children (LSAC) and found that parental involvement encourages vocabulary development. This article also found that television as well as newer forms of media such as videos and internet use fosters student achievement. A limitation of this study, however, is the absence of specific media use such as specific television programs that have proven effective for their sample age group. Nonetheless, article such as this and Reid's (1979) article on family group interaction demonstrate the positive impact family can have on children's comprehension of media. Reid's (1979) article focused on television advertising, thereby limiting its findings' ability to be transferred to television programming.

Acts for Effective Communication Via Media

The EDC's Center for Children and Technology's (2004) report asserted that "student learning from video is enhanced when common-sense principles are employed, that is, when the video message if purposeful, clear, and cogent" (p. 11). Government policies continue to provide disabled consumers of media with means of accessing information effectively. Title II of the Americans with Disabilities Act of 1990, 20 U.S.C. §§12131-12134 (2008), 28 C.F.R. §35.160 (2010), focused on ensuring effective communication for persons with hearing, speech, or vision disabilities. Title II required

public school systems to provide devices and services to students with such disabilities in order to provide communication that is clear and that makes sense to them. Title II does recognize all aspects of communication within the public sphere, not just within school systems, such as communication through television. Title II, for example, addresses the accessibility issue of public television and videos by incorporating closed captioning for the hearing-disabled and a more detailed audio experience for the visually-disabled. Title II strived in providing equal access to communication for the visually- and hearing-disable; however, it does not directly or explicitly address the needs of students or people with other disabilities, such as individuals with disabilities in reading in their discussion on aids and services.

More recently, President Obama signed the 21st Century Communications and Video Accessibility Act (CVAA) on October 2010, Pub. L. No. 111-260, 124 Stat. 2751 (2010) (amending 47 U.S.C. §§153, 225, 303, 330, 402, 503, 601 et seq., 610, 613, 710, 942), implemented by 47 C.F.R. Part 14 (2011). The CVAA was created based on the FCC's 2009 study, which found that 42% of disabled people compared to 65% of nondisabled people have broadband at home in order to use technology that is Internet-based. This Act updates previous laws, which ensured television and telephone access for disabled Americans, and provides increased accessibility to information from modern media for persons with disabilities. There are two main categories of the CVAA. The first allows technology services and products to be wholly accessible with the full use of Broadband. The second section allows disabled people to view television and Internet programming with more ease. Though this Act specifically addresses the needs of people who are visually impaired or hearing impaired, the Act was built upon previous

legislation that technology services would be accessible to all people who have disabilities. Since the second section of CVAA focuses on making viewing of programming easier and based on the assumption that people actively as opposed to passively view television, the CVAA implies the need of future policies not only addressing the needs of people who are visually or hearing impaired, but also addressing the needs of the learning disabled.

Summary

This review began with the historical background of the making of policies regulating children's television programming. The background reflected the consistent themes of inexplicitness and vagueness of policy language, thereby causing difficulty in ensuring quality program. Despite the Children's Television Act of 1990 and the 3-hour rule, it is still difficult to guarantee and determine that the broadcasting industry is meeting the educational needs of children.

This review emphasized literature addressing television's impact on two types of learning: social and cognitive. Within these two subtopics were several themes. Studies focused on prosocial learning consistently stressed the importance of parent and educator assistance in understanding and sorting through values and behaviors portrayed on programs. They also discussed the importance of relating show's conflicts and values to real-life contexts. Studies aimed at discussing television's influence on cognitive development consistently reflected themes of visual literacy, recognizing student abilities and skills as part of learning from media, and the importance of the parent and educator role in assisting students with comprehending skills and knowledge of program. Research was limited with regards to the attainment and growth of critical thinking skills,

the studies were consistent in finding that television can foster the development of skills such as analysis, synthesis, and problem-solving. Research was also limited with regards to television addressing the specific needs of students with disabilities; however, studies were also consistent in discovering the broadcasting industry's potential in supporting the learning of this student population. Other themes across the literature were: (a) limited discussion on program type that consistently found narratives as more effective on learning and (b) the constant call for collaboration between academia, educators, and the broadcasting industry.

Though several themes existed across the literature, other major points of research findings amongst studies vary. Regarding television's impact on social skills development, some researchers found that other media such as film and books have more of a significant influence on skills development. Other researchers found that television has the potential to positively shape behavior as long as parents and educators assisted with interpretation and analysis of values portrayed on the shows. Regarding television's impact on cognitive development, some researchers argued that television has a negative impact on achievement whereas others found the contrary to be true. Some studies stressed the relevance of student skills and abilities as factors in comprehending program content whereas others focused their study on children's viewing learning capacity from the perspective of developmental age.

This review discovered several gaps in the literature regarding television and its influence on children's social and cognitive development. First, there was a constant lack of theoretical frameworks used within these studies. Only one study utilized two schools of thought to frame its study on television viewing and academic achievement—Shin's

(2004) stimulation and reduction principles. Next, most studies presented in this paper contained limitations such as findings that could not be generalized due to participant sample or setting limitations and limited emphasis on student abilities and skills as they relate to viewing literacy. Also, there was limited focus on studying the influence of television programs in their ability to foster the development of critical thinking skills and minimal focus on studying actual content of programs used in studies. Hence, as most researchers agreed, the limited amount of research studying program content was a key reason in understanding the continued lack of ability to determine whether television programs truly impact student learning.

There is much evidence that television is a part of the lives of our youth. Despite varying conclusions of multiple research studies, television's programming, nonetheless, has the potential to provide educational value to its audience. To date, research has suggested that educational potential has been more realized with the younger age groups such as preschoolers with documented research supporting the success of shows such as *Sesame Street*. Such shows focus on school readiness skills such as counting and basic reading skills. However, as stated earlier, very little research has explicitly studied television programming as fostering the development of academic skills.

Through his discussion on education and competition in his book *The World Is Flat*, Friedman (2007) emphasized the importance of the role of education in today's youth. He also discussed the need for students to learn how to synthesize and think in new ways. He spoke about the need for a balanced education that includes science, technology, and a liberal arts education. His discussion rallied around the importance of thinking creatively, about innovation, and about judgment. All these skills reflect critical

skills that are essential for children to succeed in today's world. Unfortunately, students with disabilities need additional support to prepare them for a life that is functional and contributing. This study investigated the role of television programming in developing children's academic skills, particularly those of students with a specific learning disability in reading literacy, and implications for practice and policy.

CHAPTER 3:

METHODOLOGY

Introduction

School classrooms consist of diverse learners, whose learning needs and traits warrant attention. With specific regards to reading disabilities, citing Shapiro, Church, and Lewis (2002), Therrien and Hughes (2008) noted that 80% of the millions of students with learning disabilities have reading as an identified area of deficiency. Furthermore, research has acknowledged television viewing as a dominant activity amongst children (Watkins, 1985). Educators with the broadcasting industry should, therefore, consider television programming as a potential supplemental source of instruction to help meet the needs of the diverse student population. Rose (2012) stated that

> A critical approach to visual images is . . . needed: one that thinks about the agency of the image, considers the social practices and effects of its viewing, and reflects on the specificity of that viewing by various audiences, including the academic critic. (p. 17)

My investigation adds to current literature on television as a possible learning tool by focusing on television's ability to address the particular needs of students with a specific learning disability in reading. My study may, therefore, also provide a platform for more creative programming intentionally designed to meet the needs of students with learning disabilities. Findings may also imply the need for more explicit policies regarding the expectations of airing quality educational programming.

The review of literature has recognized that children have the ability to act as involved and engaged viewers of television. Watching television in an involved and

engaged manner has been referred to as active viewing theory. The review has also acknowledged that television can serve as a potential source of educational support because of program structures and embedded strategies. My dissertation study aimed to explore children's educational television programming as a potential resource in aiding the academic progress of students with a specific learning disability in reading literacy. The main research question of my investigation is: how does current children's educational television programming address the learning needs of students with a specific learning disability in reading? A subquestion that worked towards addressing the overarching question is the following: a) What research-based instructional strategies and program characteristics such as audio and visual cues used by television programming can foster reading skill development for students with a specific learning disability in reading?

Using qualitative content analysis, my study examined the educational content of current programming for its ability to address reading deficits by identifying teaching strategies and program characteristics that may support reading skill development in special needs students.

Epistemology and Theoretical Framework

Glesne (2016) stated that the central research objective of the epistemology of constructivism is to understand. My investigation aimed to understand television's ability in addressing the learning needs of students with a specific learning disability in reading. Moreover, according to Crotty (1998), meanings are built by people as they interact with the world and as they interpret these interactions. Altheide (1996) added that everything is constructed through the ongoing course of communicating and

interpreting and added that even as infants, "the symbolic order . . . infuses our own view of oneself, others, and our future" (p. 8).

This is consistent with Lorch and Anderson's (1979) theory of active viewing, which proposes that children are active versus passive learners of television content. This theory suggests that increased student engagement behaviors imply increased comprehension of television programming content. Their study also found that nonvisual elements such as auditory traits positively influence children's visual attention to programs. Consistent with this theory, Crawley et al. (2002) found that program participation indicates that program content was learned. The results of their study demonstrated that children's visual attention to television is dependent upon the information-processing demands of the show. This dissertation was focused on determining the ability of television's communicated messages to influence the reading progress of students with learning disabilities in reading. In addressing my research question, my study operated under the thought that people interact, engage, and communicate with television content in a subjective manner.

Constructivism is often related to the epistemology of interpretivism, which focuses study on the issues of marginalized populations (Creswell, 2007). The interpretivist view, in contrast to the constructivist view, however, has an element of social justice and studies using this framework may, therefore, lead to action to address social prejudices (Creswell, 2007). My research dissertation focused on exploring television program content for embedded strategies that may provide access to its educational value for students with mild learning disabilities. My study has implications for practice and policy for this marginalized population; however, its purpose did not

seek to correct a particular social injustice for this group. It was simply determining whether or not television programming is accessible for students with mild learning disabilities. Thus, the constructivism paradigm along with active viewing theory provided the necessary structure to address my study's purpose, which would hopefully lead to valuable information that would result in programming committed to addressing learning differences and that would result in stricter federal policies surrounding accountability procedures.

Research Design

Under the constructivist paradigm, my investigation explored television program teaching strategies and program elements and their potential to assist the special needs population's ability to access and learn from television program content. The constructivist worldview recognizes that people gain meaning from their experiences based on how they themselves view the world and based on how they process the interactions within their experiences (Creswell, 2007). This paradigm was essential to my study as it acknowledged that students are diverse individuals who use multiple ways to gain and apply knowledge during the learning process and that students with reading disabilities experience the world of learning differently than their general education peers.

I developed my study from the perspective that students are active viewers of television (Lorch & Anderson, 1979), which theorize that people are engaged and attentive with the presented viewing material particularly when the material is comprehensible to them. Assuming that students actively view television and that understanding of viewed material is constructed and based on how students process the

information, I conducted the qualitative methodology of document analysis to determine program content's ability to address reading deficits in disabled children.

Altheide (1996) stated that documents help us make sense of the development and meaning of societal activities. He emphasized the notions of process, how something is made, and context, the social situations involved, as being essential when investigating the meaning of documents. Altheide added that patterns and meanings emerge after the analysis of documents over time and that this emergence of understanding provides understanding of ongoing progression of social life. The methodology of document content analysis gave essential information in understanding television's ability to be a learning source for students who struggle with reading. Increased insight and understanding of program creation in context of today's diverse audience needs provide implications for practice in the classroom and in television program development. More importantly, findings provide implications for policies regarding the airing of children's programming of quality substance for wide audiences.

Document and Content Analysis

According to Labuschagne (2003), qualitative research is concerned with discovering meaning from the participant's viewpoint. Maxwell (2013) explained that qualitative research is interested in process theory, which views the world from the eyes of people and scenarios and the processes that intertwine them. Qualitative research, according to Maxwell, is concerned with the inductive approach and the descriptive analysis of connections between people and events. My methodology was, therefore, qualitative in nature; it was focused on finding meaning of televised programming from the perspective of learning- disabled students. It is important to note that my

investigation did not include studying the impact of television programming on student learning. Instead, my study explored the context of television viewing from the perspective of the learning-disabled and the possible influence that television viewing of educational programs has on the progress of students with a specific learning disability in reading. To address my research questions, I specifically examined the process by which students can gain educational information from children's television programming by conducting a document analysis of sample television episodes.

According to Merriam (2009), public media material such as television programming can serve as data; such material is referred to as 'popular culture documents.' Merriam stated that media forms can be practical sources when "dealing with questions about some aspect of society at a given time, . . . for tracking cultural change and trends" (p. 144). Quoting Merriam, Bowen (2009) explained that document analysis can give insightful information associated with the research problem. Performing document analyses in my study was significant in studying the question of television's ability to respond to the trend in increased eligibilities in special education.

Krippendorff (2013) captured the history of content analysis explaining that this methodology can be traced back to the 17th century in the Church's analysis of nonreligious printed materials. By the 20th century, mass production of newspapers led to empirically-based examinations of this print phenomenon. Later, content analysis of newspapers was extended to other forms of mass media such as radio, movies, and television.

Krippendorff (2013) explained that content analysis involves several assumptions. First, the intent of broadcasters can differ from the information that the audience

interprets from the text. Also, predictions or inferences of phenomena are challenging to assess such as what people could learn from television viewing. Interpretation of texts must also consider the context in which they are being analyzed. Lastly, he noted that qualitative analyses can be just as reliable as quantitative analyses and in some cases, qualitative analyses would be more appropriate depending on the purpose and research questions of the study.

The analysis framework of this methodology involved several simple parts (Krippendorff, 2013). The first being the text itself, which in my study, was the visual and audio content of children's television shows. The second was the research question that my analysis answered. The overarching research question is the following: how does current children's educational television programming address the learning needs of students with a specific learning disability in reading? My text analysis directly addressed the following research subquestion: a) What research-based instructional strategies and program characteristics such as audio and visual cues used by television programming can foster reading skill development for students with a specific learning disability in reading?

The next two components of the analytical framework are context and the analytical construct from which the component of abductive inference-making (Krippendorff, 2013) is done. Conducting an analysis of the televised programs for strategies and interventions assumes that students are able to create meaning of what they view and hear in the shows. This assumption is aligned with the active viewing theory, which proposes that people are engaged and active participants when viewing television (Lorch & Anderson, 1979). Therefore, in order to have addressed my research questions,

I conducted a content analysis of the data gathered from viewing sample television shows in search of evidence of a literacy environments as well as evidence of proven research-based strategies, interventions, and accommodations for the learning-disabled population. The content analysis was necessary as it led to the discoveries of themes and categories within each and across all sample shows; this is what Bowen (2009) refers to as thematic analysis.

There are usually three types of units involved when conducting content analysis: (1) sampling units, (2) context units, and (3) and recording units (Stemler, 2001). For my study, the sampling units were the television episodes. The context units, the specific data that I captured, were program elements such as character dialogue and the visual and sound characteristics of the shows. Thirdly, the recording unit reflected the educational value for students with special needs; examples included strategy cues, sequencing, or questioning.

During the course of analysis, I used what Stemler (2001) referred to as emergent coding. Emergent coding involves the creation of categories after preliminary data examination. With this process, I viewed the sample shows and looked for common features in the shows' environment such as the use of audio and visual elements which appeared to be useful accommodations in helping students with special needs understand the educational content of the shows.

I also examined the shows for evidence of research-based interventions and strategies that have been proven effective to address reading deficiencies in students with special needs. Using a protocol that I created and later refined throughout the analysis, I listed the raw data observed from the viewings. I examined this set of data to first create

open codes, and then, I organized the open codes into axial/thematic/categorical codes (Coffey & Atkinson, 1996). During the analysis, I compared the data and codes with a list of described proven interventions to discover any areas of overlap, which implied the shows' ability to inform learning-disabled children of their educational content.

The establishment of categories involved rigorous evaluation of the data, the revision of categories until the main categories that addressed the research questions remained, and reliability checks; this process is what Mayring (2000) referred to as feedback loops. Bowen (2009) explained that in thematic analysis, more focused and meticulous reading, re-reading, and review of the data is necessary to assure that only the pertinent information related to the topic is included. Altheide (1996) added that the analysis depends on the protocol, categories, and the ability to make comparisons for the production of several varying codes within each group. Hence, my investigation included a meticulous process of code and category development in order to ensure that only the essential data was included in my study.

In analyzing the data, Altheide (1996) stressed the importance of a detailed reading and re-reading of notes made during the coding process. The analysis also involved the comparison and contrast of data that represented the outliers and essential differences. Hence, note-taking and summarizing were additional necessary parts of the process. This included acknowledging any surprises, questions, and comments about the data and/or process. My analytical process, therefore, included relevant notes and summaries about the data and the analysis process itself.

Television Program Sample Selection

Using what Krippendorff (2013) referred to as relevance or purposive sampling, I selected television programs whose mission is to foster reading skill development. These program series were specifically chosen from a television station that is dedicated to providing quality educational programming for children. Since this study's sample consists of programs from one television network station, in order to allow for contrasts and comparisons and therefore, in order to capture a deeper understanding of my topic, it is important to note that each television series represented a different creator or author and all series together represented a wide array of reading skill foci for beginner readers and elementary-aged students. This sampling plan aimed to provide comprehensive data that addressed the research question.

I analyzed the content of six television program series, each of which three sample episodes was used for the study. They were specifically chosen because they attended to the establishment of literacy-building skills. The following are the programs that were used for this study: 1. *Between the Lions*, 2. *Martha Speaks*, 3. *Word Girl*, 4. *Electric Company*, 5. *WordWorld*, 6. *Super WHY!*. *Between the Lions* focuses on strengthening reading skills such as phonemic awareness and fluency for the targeted age group of three to 7-year-olds. *Martha Speaks* and *Word Girl* both aim to build vocabulary skills with *Martha Speaks* having the specific targeted age group of 4- to 7-year-olds. *The Electric Company* is an updated version of a 1970s show. The program aims to strengthen phonics, vocabulary, and comprehension skills of the six to nine targeted age group. *WordWorld* targets preschoolers providing the necessary lessons on letter and sound associations, word building, and vocabulary. *Super Why!* focuses on

fundamental alphabet skills, spelling, word families, vocabulary, and comprehension. Though this show is directed towards preschool-aged children, the show's audience also ranges to include kindergarteners and 6-year-old students.

Data Collection

I evaluated current children's television programming for the existence of teaching strategies and program elements that may support reading skill development or that may provide reading remediation. Under evaluation were three sample episodes of six television shows whose purpose included fostering a specific component/s of literacy development. These shows were chosen from one primary broadcasting network that is known to intentionally provide educational programming for youth.

The shows were evaluated for the presence of teaching strategies and programs elements that may improve reading skill development and literacy. To guide the data collection process, I created data collection protocols and revised the protocols throughout the process in order to include all emergent categories in hopes that my research question would have been fully addressed. Through emergent coding (Stemler, 2001), I created categories of common features that appeared to be useful strategies, interventions, and accommodations in helping students with special needs understand the educational content of the episodes. Altheide (1996) recommended a midpoint analysis, in which the researcher assesses his or her category establishment. To account for appropriate category establishment, my data collection procedure included a midway examination of category development and allowed for any refinement, creation, or collapse of categories. Towards the latter part of code and category development, in addition to analyzing data of television program elements, I compared the data from the

emerging codes with a list of research-based strategies to identify any areas of overlap and ultimately, to determine the shows' ability to teach its content to learning-disabled children.

Lastly, my investigation also included note-taking and the formulation of summaries of relevant data and of the process itself. Saldana (2013) explained the importance of analytic memo writing, a reserved place of the research process where the researcher thinks and reflects about the data. During this part of the analysis, I noted any insight, connections, patterns, and questions in hopes that the memos will have enhanced and further my overall analysis of the data. It is important to note that my analytic memos would have served as additional rich and detailed about the program's specific elements and as a television show in its entirety and would, therefore, have provided a more holistic analysis (Saldana, 2013).

Research-Based Reading Strategies

My study used research-based strategies and interventions in determining television's potential in addressing the learning needs of students who have a specific learning disability in reading. I referred to previously-discussed research studies in compiling the list of proven interventions. Swanson (1999) found strong treatment outcomes of the following strategies: a) sequencing, in which the teacher matches task difficulty to student ability and provides prompts, b) segmentation, which teaches the components of a skill and the synthesizing of those components, c) and advanced organizers, which highlight the essential information, provide information about the task, and make the lesson objectives explicit, d) questioning or direct response, in which students to actively participate in dialogue about the reading, e) task difficulty is

controlled, f) elaboration of text, steps, or concepts, g) teacher modeling, and h) strategy cues, in which teacher provides reminders to use strategies, think alouds. Though Swanson found group instruction as also having strong treatment outcomes, group instruction is not directly applicable for this study since my study focuses on examining television content and not learning setting characteristics.

Gersten et al.'s (2001) findings also supported the use of advanced organizers, explicit strategy instruction, and teacher modeling to increase reading skill development for students with learning disabilities. Similarly, Berkeley et al.'s (2010) meta-analysis found questioning and strategy instruction to be effective intervention treatments. Berkeley et al. (2010) also found text enhancements such as embedded text questions, graphic organizers, and vocabulary instruction as strongly and positively impacting student outcomes.

Strategy instruction is an intervention treatment across the research studies of Swanson (1999), Gersten et al. (2001), Berkeley et al. (2010), and Brigham et al. (2007) found to improve results for students with learning disabilities in reading. The research efforts of the Institute of Education Sciences (What Works Clearinghouse, 2010) also found that strategy instruction has the strongest causal relationship to promoting reading comprehension. They found that instruction in the following strategies improve student outcomes: a) predicting or using prior knowledge to aide in constructing meaning of the text, b) questioning about the main points while reading, c) visualizing images of the reading material, d) students self-clarifying or self-monitoring their understanding of the material, e) inferring important information with the use of context clues, and f) retelling the reading's main ideas. Though IES's research was not aimed at studying the impact of

interventions on the learning of students with reading disabilities, their evidence on strategy instruction supports the evidence found in Swanson (1999), Gersten et al. (2001), Berkeley et al. (2010), and Brigham et al.'s (2007) research studies. The list used for my data collection, however, did not include the strategy of visualizing because my study inherently involves animated, visual images and the effective use of these images will be analyzed using Mayer's (2009) principles. Also, I did not include the self-monitoring strategy on my list as my study did not examine or observe student response behaviors when viewing television programming.

My study took into consideration that the research-based strategies reflects studies that researched reading instruction using traditional written text such as books. Therefore, an indication of the use of a strategy was determined by the television content's close relation to the strategy's description. Moreover, some descriptions stated 'the teacher'; the television program was assumed as the 'teacher' for the purposes of this study. Additionally, students, for example, exhibit the strategies of predicting, inferring, and summarizing strategies in the classroom; however, since observing students was not part of my investigation, evidence of these strategies being built into the shows came in the form of the television episodes prompting students to predict, infer, and summarize. Also, since various research studies shared similar strategy results, descriptions of strategies that were related to other strategies have been grouped into one strategy category.

Proven Television Program Characteristics

According to Mayer's (2009) cognitive theory of multimedia learning, learning content from multimedia instruction involves the cognitive processes of choosing

important images and words for processing in visual and working memories, mentally organizing words and images, and synthesizing both visual and verbal depictions. In order to aide in determining the ability for television to effectively and positively impact student learning, I utilized Mayer's principles as criteria in assessing the sample television programs for effective use of program elements such as audio and visual elements. Though Mayer's research program of empirical studies did not specifically investigate learning outcomes for the learning disabled, his research of 20 years, nonetheless, provides insight in the ability of multimedia, such as television, to instruct its audience.

The first set of Mayer's (2009) principles addresses the issue of excessive cognitive processing. The coherence principle (effect size of 0.97) asserts that learning improves when extra graphics, sounds, and words are deleted. The signaling principle (effect size of 0.52) states that learning occurs when key visuals and words are highlighted. The redundancy principle (effect size of 0.72) suggests that learning increases when repetitive captions of animated works are omitted. The spatial contiguity principle (effect size of 1.09) states that learning improves when relevant words are stationed in close proximity to their matching visuals. The temporal contiguity principle (effect size of 1.31) proposes that words and images shown at the same time improve learning.

The second set of Mayer's (2009) principles addresses the need to handle relevant information efficiently so that learning can best occur. The segmenting principle (effect size of 0.98) suggests that need to segment essential information as opposed to presenting the information as one flowing unit. The pre-training principle (effect size of 0.85)

highlights the need to pre-teach key lesson concepts so that learners increase the opportunity to grasp the full presentation. The modality principle (effect size of 1.02) encourages the use of spoken words with pictures as opposed to printed words accompanying pictures.

Mayer's (2009) last set of principles is concerned with organizing and synthesizing newly introduced content with prior knowledge. The multimedia principle (effect size of 1.39) argues that learning occurs more with both pictures and words instead of solely words. Personalization principle (effect size of 1.11) suggests that learning improves with the use of a conversational style of speech versus a formal style of speech. Relatedly, the voice principle (effect size of 0.78) proposes that people learn better when speech uses human voice as opposed to machine voice.

Trustworthiness

Merriam (2009) argued that obtaining reliability where research conclusions can be replicated is challenging in the social sciences because human behavior is dynamic and can be specific to one person. She explained that one person's experience is not automatically unreliable; likewise, the shared accounts of events of a group of people are not necessarily trustworthy. Merriam stated that "The more important question for qualitative research is *whether the results are consistent with the data collected*." (p. 221). According to Labuschagne (2003), the reliability of qualitative studies is based on the identification and documentation of consistencies or inconsistencies such as themes and patterns under investigation in similar or dissimilar contexts. Merriam shared that this is what Lincoln and Guba (1985) termed as "consistency" or "dependability." My research explored the consistencies and inconsistencies of reading strategies and

interventions found in television content compared to those effectively used in the classroom.

Reliability within content analysis also involves intra-rater reliability, where the same coder obtains the same results after multiple times, and inter-rater reliability (reproducibility), where multiple people code the same text in the same category. I, therefore, aimed to achieve intra-rater and inter-rater reliability by achieving consistency also when classifying text. I sought the assistance of two persons, a reading specialist who has experience with working with students with a specific learning disability in reading and a special educator who has experience teaching a self-contained reading class. I chose people who have experience teaching at the elementary school level as they were familiar with instructing the primary age group of the audience of the television programs that were being examined. These inter-raters conducted a peer review of my data to address trustworthiness issues.

In addition to using intra- and inter-rater reliability to determine trustworthiness, using Maxwell's (2013) validity checklist as a guide, I also increased the validity of my data by ensuring my analysis consists of rich data by engaging in an intensive coding process that resulted in compiling detailed data that had assumed and unassumed relevance in addressing my research question.

Subjectivity Statement

In her discussion on ethics, reliability, and validity, Merriam (2009) spoke about 'reflexivity,' which is the process of critical reflection of self that the researcher undergoes. Merriam stated that discussing the researcher's position—including

experiences, worldviews, assumptions—is essential in establishing the reliability of the researcher and the process.

As the investigator of this study, it is important, therefore, to disclose that my professional background includes teaching special education. I have been an educator for 14 years, of which I spent 10 years teaching special education. I have taught Language Arts, reading, math, science, and history at the middle school level. I have worked with numerous students of varying disabilities with the majority of them having difficulty with the reading process. My teaching experience may have consequently affected my perspective on special education accommodations, interventions, and strategies as well as my inquiry process and hence, my research findings.

Additionally, I personally believe that television can be used as a supplementary teaching tool for students. To address this personal bias, I have included varying research perspectives on the learning debate on television's utility in the literature review section. I have included varying research views and findings that span's television's role not only in academic growth but also in social development to demonstrate a full and comprehensive look at television's ability to influence and teach.

Ethical Considerations

Merriam (2009) stated that "the validity and reliability of a study depend upon the ethics of the investigator" (p. 228). She noted that ethical problems such as privacy rights and anonymity likely arise during data collection and the dissemination of research findings. Though my study did not involve the participation of humans, ethical considerations still existed when conducting content analysis. Merriam (2009) explained that since document analysis involves the researcher as the main instrument for data

collection, interpretation and deciding what is essential can reflect personal bias. Therefore, in my study, I was mindful of including all data relevant to my research question.

CHAPTER 4:

RESULTS

Overview

The purpose of the study was to investigate current children's television programs' ability to strengthen reading skills of students who have a specific learning disability in reading. Using the qualitative method of content analysis, I analyzed the educational content of three episodes for each of the following six shows for research-based teaching strategies and for program characteristics that may promote the learning of the content material: a) *SuperWHY!*, b) *Martha Speaks*, c) *WORDGIRL*, d) *The Electric Company*, e) *WordWorld*, and f) *Between the Lions*. The study found that every episode of every show demonstrated the use of several research-based strategies. Of the six shows, the show that had evidence of every research-based strategy across all three episodes was *SuperWHY!*; each episode utilized multiple best practices every five minutes with the most-used strategies having been questioning, teacher modeling, and accessing prior knowledge. Also, the study found that the research-based strategy common in all six shows was teacher modeling, in which the characters taught viewers how to conduct reading skill-related tasks such as word-building or decoding. Regarding the ability to foster a multimedia learning environment, results per show varied. However, *SuperWHY!* had evidence of the most consistent use of effective audio and visual elements across the three episodes examined.

Research-Based Reading Strategies

This study analyzed raw data from 18 episodes of current television programs for evidence of teaching strategies based on research findings from Swanson (1999), Gersten et al. (2001), Brigham et al. (2007), Berkeley et al. (2010), and the IES Practice Guide on *Improving Reading Comprehension in Kindergarten Through 3rd Grade* (What Works Clearinghouse, 2010). The following are 10 strategies proven in the classroom to be effective with reading instruction for students with special needs: a) sequencing, b) segmentation, c) advanced organizers, d) questioning, e) elaboration and text enhancements, f) teacher modeling, g) strategy use cues, h) predicting/accessing prior knowledge, i) inferring, and j) summarizing/retelling.

Sequencing

The technique of sequencing involves breaking down the task so that the level of difficulty is equal to the student's ability to do the task (Swanson, 1999). This is usually done by providing prompts and then, eventually fading the use of prompts. The use of the sequencing strategy was evident in each of the three episodes of all six shows with *Martha Speaks*, *WORDGIRL*, and *SuperWHY!* having demonstrated the most use of this strategy.

Martha Speaks demonstrated the use of this strategy, often providing prompts and context clues during vocabulary instruction. The show usually began its episode explicitly defining vocabulary and as the episode continued, it would often refer to key vocabulary within the context of the storyline to reinforce the vocabulary's meaning. Here is an example of raw data from the first five minutes of *Martha Speaks: Martha the Hero Maker* (Scarborough, 2014b) using sequencing in its vocabulary instruction:

> Character TD introduces episode's key vocabulary: ecstatic "means really happy," thrilling, and enthusiastic. The episode begins with Helen babysitting her baby brother and the neighborhood kids join. TD finds babysitting "dull" and he wants to do something thrilling and exciting. The kids decide to create comics about dog heroes. "Thrilling" is used 3 more times in dialogue.

Martha Speaks not only taught meaning of words explicitly but it also gave learners context clues constantly in order to reinforce meaning.

WORDGIRL used sequencing in a similar manner for its vocabulary instruction and sometimes provided prompts with the constant use of synonyms or story context clues to reiterate key vocabulary's meaning. For example, in its episode, *A World Without WordGirl* (Ganz, Samson, & Raddatz, 2012), the term 'antsy' was defined as 'can't wait.' Immediately after the word was explained, the main character, WordGirl, rushed to help others because she wanted to quickly return to her birthday party. Throughout the next few minutes, other characters referred to WordGirl as being 'antsy' because of her hurried-like behavior.

SuperWHY! used sequencing during the skill tasks of each lesson objective. Every episode provided cues to the student audience in order to help them work through the skill tasks such as those involving the alphabetic principle, spelling, reading, and comprehension. For instance, in all of its episodes, in the task of reading a sentence, the words of the sentence were highlighted as they were being read. As another example, the show ultimately solved the story's conflict by changing the meaning of a sentence with the changing of one of its words. The main character, Wyatt, led students on which word to choose. For example, in *Naila and the Magic Map* (Hamberg, 2012b), the original sentence read as "Naila sees the secret message." Wyatt asked the audience what word will help them understand the secret message. He gave viewers answer choices and then,

he prompted them to find ‘solves’ by stating “it has a ‘v’ in it.” The new sentence then read, “Naila solves the secret message.”

Segmentation

Segmentation (Swanson, 1999) is a strategy in which a skill is separated into parts and/or synthesized. All six shows save *Martha Speaks* and *WORDGIRL* demonstrated the use of this strategy especially in how it related to spelling and word-building. *Between the Lions* used this strategy when teaching its episodes’ skill foci such as the building of words using a specific vowel sound. In *The Lost Rock* (Stiles, 2000) episode, within an approximate one-minute segment, words with the short vowel *o* were built with their beginning and ending parts consistently changed to create more words with the short vowel *o*. For example, the segment showed the transformation of the word ‘clock’ to the word ‘mock,’ which then changed to ‘mom,’ and then, to ‘pop.’

WordWorld’s key strategy was clearly segmentation as this show’s main objective task included word-building and spelling throughout each of its episodes. For instance, in *Happy Birthday, Dog!* (Moody, Yerkes, Danko, & Mason, 2015b), Dog dug up letters H-A-T, the narrator sounded out every letter and the show’s audience of kids stated ‘hat.’ Then, the word formed into a birthday hat for Dog. In the same episode, Pig taught Frog how to build a ‘cake’ a few times by putting together the letters and sounding out the word into two parts, ‘c’ and ‘-ake’ before the reading of the word in whole. The lesson itself used segmentation; however, this episode also demonstrated the sequencing strategy by Pig providing Frog (and audience) with explicit prompts during the first building of the keyword ‘cake’ and then, later in the episode, Frog applied what he had learned from Pig and built ‘cake’ easily without Pig.

SuperWHY! used this strategy throughout its episodes in its lesson objectives' tasks such as those involving the alphabetic principle and spelling. For example, in its *Jasper's Cowboy Wish* (Hamberg, 2012a) episode, Pig asked the audience to help him build the word 'saddle' through the task of letter recognition. Later, Princess requested audience's help to spell the word 'spin' by focusing on letter-sound relationships. In both types of tasks in the show's episodes, the characters read the key words after the words were built together with the audience.

Two episodes of *The Electric Company* demonstrated the use of segmentation mainly for purposes of teaching the audience how to spell and build words. Their use of segmentation often involved the constant building and spelling of new words around a key vowel sound. For instance, in *Lights, Camera, Beetles!* (Reale, 2009a), a segment was dedicated to the building of short 'u' words such as 'rug.' Its episode *Trouble Afoot*'s (Reale, 2009b) karate scene demonstrated how to build short 'i' words such as 'lipstick' and 'shipyard' by breaking away the beginning and/or ending word parts and putting together new parts to create new words.

Advanced Organizers

Highlighting relevant information and providing students with information and/or lesson objectives before a lesson or task are referred to as advanced organizers (Gersten et al., 2001; Swanson, 1999). Four of the six shows used advanced organizers to signal important information at the start of their episodes.

Every episode of *WORDGIRL* and *Martha Speaks* highlighted key vocabulary prior to the show. In each episode, *WORDGIRL*'s narrator told the audience to listen out for two key words. Though the narrator did not explicitly define each term, the nature of

the program provided multiple opportunities for students to learn the meaning of vocabulary through their multiple uses in context of the storyline. For every approximate half-hour *Martha Speaks* show, there were two related mini-episodes. One of the *Martha Speaks's* characters began each half-hour show with stating the key vocabulary words and in two of the three episodes, with defining key words for both mini-episodes that all relate to one topic or idea. For example, in *Dinosaurs in Trouble* and *Puppy Skits* (Scarborough, 2014a, 2014c), character Martha stated and defined key vocabulary of the show's two mini-episodes' storylines, which both are related to 'past' and 'time.' Words such as 'fossils', 'museum', 'exhibit', and 'paleontologist' were highlighted and defined as they were used in both mini-episodes. With vocabulary-building as its main objective, it is important to note that each first mini-episode of *Martha Speaks* also taught additional vocabulary related to the show's topic at the end of the mini-episode. For instance, in the above show, words such as 'era' were defined. However, at the end of the second mini-episode, characters of the show reviewed the main vocabulary words that were highlighted before the show began. In the above example, 'fossils' were re-defined.

Every episode of *SuperWHY!* presented its lesson objectives, which reflected key reading skill elements such as phonics, vocabulary, and comprehension. The show began every episode with telling students what they, as involved learners, will be doing. For example, in *Naila and the Magic Map* (Hamberg, 2012b), character Wyatt introduced the book *Naila and the Magic Map* and told the audience that they will "use the alphabet, ... rhyme with 'ish' words, . . . discover a new word . . . and power to read to change the story."

Two *Between the Lions* episodes also used this strategy to introduce each episode's reading skill focus. Though this show alerted its audience to the key reading skill focus, each of its episodes often incorporated other lesson content material that were not introduced prior to the episodes' start.

Questioning

Swanson (1999), Berkeley et al.'s (2010), and the research of the Institute of Education Sciences (2010) found that student engagement in discussion via questioning or response exchange improves reading skill development. Only two shows, *SuperWhy!* and *WordWorld*, used the questioning strategy. *SuperWhy!* directly solicited audience participation during every lesson objective task in each of its three episodes. For example, in its episode *Around the World Adventure* (Friedman, 2012), words on a page of book were highlighted as they were being read by Wyatt, who invited the audience to read along. Later in the episode, Pig asked the viewers to help him build the word 'rope' as he sang the alphabet. In the same episode, Princess also asked the audience to build or write the word 'sun.' At the completion of every reading-related task, *SuperWHY!* also provided students with positive reinforcement of the learning that should have occurred. For example, at the end of the task of building the word 'sun,' Princess stated "Spectacular spelling!"

WordWorld implicitly sought responses from its audience as the show audience modeled reading of a word after the word was spelled or built. For instance, in the *Merry Christmas: The Christmas Star* (Moody, Yerkes, Danko, & Mason, 2015a) episode, Frog built the word 'tree' and then, the background vocals of children (show's audience) stated the word 'tree.' This implied the request for home viewers to respond with 'tree' as well.

Though not consistently, the show also provided positive reinforcement at the completion of learning tasks. In its episode *Happy Birthday, Dog!* (Moody et al., 2015b), Pig built the word 'cake,' the show's audience stated 'cake' after the word was built, and Pig stated "that's right, cake."

Elaboration and Text Enhancements

Berkeley et al. (2010) and Swanson's (1999) research indicate that vocabulary instruction, embedded questions, and additional information about content and steps foster reading progress in students with reading deficits. All six shows demonstrated this strategy use mainly in the form of providing more information about the storyline's concepts and key words or vocabulary. The use of this strategy was clearly evident throughout the running time of every episode of *Martha Speaks* and *WORDGIRL*, whose main lesson objective was vocabulary instruction. Both these shows implicitly and explicitly defined key terms and used key vocabulary multiple times, often with the use of synonyms of key words within storyline contexts to solidify learning of meaning.

Teacher Modeling

Brigham et al. (2007), Gersten et al. (2001), and Swanson (1999) found that students show reading gains when teachers model strategy steps as in, for example, the decoding process. This was the most commonly used strategy throughout every episode across all six shows, where animated characters, for example, demonstrated how to build words, spell, read, write, use vocabulary, and problem solve.

Strategy Use Cues

Swanson's (1999) research findings also indicate that reminding students to use strategies taught is also key to reading skill development for struggling readers. All three episodes of *SuperWHY!* used this strategy to remind students how to complete a lesson objective task such as reading, applying the alphabetic principle, and the building of words. For instance in *Naila and the Magic Map* (Hamberg, 2012b), words were highlighted as Wyatt read the word aloud; this encouraged students to attend to text and track words as they read. In the same episode, Pig demonstrated the use of singing the alphabet as a way to remember letters. For instance, as he sang, he forgot a few letters along the way and asked audience members to help him. Later, Princess taught students how to create '-ish' words such as 'fish' by reminding students to use their skill in letter-sound relationships.

The Electric Company's *Trouble Afoot* (Reale, 2009b) used this strategy in one segment that conducted a think-aloud with the word 'flicker.' The segment very explicitly taught students to use their skill in phonemic awareness in order to build the word and decode 'flicker.'

Two *WordWorld* episodes also reminded its viewers how to build words after having already modeled how to do this task earlier in the show. In *Happy Birthday, Dog!* (Moody et al., 2015b), for example, Frog asked Pig to make a cake for Dog. Pig built a cake by referring to a recipe book, showing and saying, in order, the individual letters that make up the word 'cake.' Then, Pig built the word 'cake.' He read the word 'cake' in two parts as 'c—ake,' and the cake image is created. Later in the episode, the cake fell

down and broke apart. Frog, then, rebuilt the cake (word) by recalling how Pig created 'cake.'

Predicting/Accessing Prior Knowledge, Inferring, and Summarizing

Student use of background knowledge and of context clues to help make logical connections, create predictions, and build meaning along with retelling of main ideas/events in hopes to better comprehend material have proven to be key in building student comprehension (What Works Clearinghouse, 2010). All six shows used at least one of these three strategies at one point during each of their episodes. *Between the Lions* required audience members to use prior knowledge and to infer in order to help students track their understanding of storylines and of the reading of any presented printed text. All three *Martha Speaks* episodes also used the same two strategies for storyline comprehension, but this show also used the summarizing strategy in each of its episodes when reviewing the vocabulary taught.

SuperWHY! audience members also needed to access their prior knowledge and to infer in order to make predictions and follow its storylines. Characters of the show also summarized read text and at the end of each episode, the show summarized the episode's main events. In every episode, *The Electric Company* required viewers to use their background knowledge and context clues to make predictions and infer; one episode of this show summarized the main events of its storyline. *WORDGIRL* also used inferring and accessing prior knowledge so that students can strengthen their vocabulary comprehension and in two episodes, *WORDGIRL* summarized its storyline for its viewers. *WordWorld* also used inferring and accessing background knowledge to aide

storyline comprehension and in one episode, the show summarized its lesson theme on safety.

Proven Multimedia Principles

In Mayer's (2009) cognitive theory of multimedia learning, learning from multimedia involves processing and organizing words and images in visual and working memories and synthesizing visuals and words/dialogue. Mayer's (2009) first set of principles is concerned with excessive cognitive processing: a) coherence, b) signaling, c) redundancy, d) spatial contiguity, and e) temporal contiguity.

The Electric Company and *Between the Lions's* multimedia presentations across their three studied episodes displayed evidence that viewers will be engaged in excessive cognitive processing. Data indicated the existence of extra sounds and graphics throughout each episode, repetitive captions, inconsistencies with regards to words being placed near their visuals, and inconsistencies with regards to words and images being shown at the same time. These shows, for instance, used music and rap songs heavily when highlighting a vowel sound, for instance. Also, examples of excessive graphics included a printed text banner constantly being run throughout one episode and squiggly marks animated on a screen during a rap during another *Between the Lions* episodes. This seemed random at times, and more decorative, entertaining use than purposed for supporting skill being taught. *Between the Lions*, however, showed consistency in each of its three episodes through the signaling and highlighting of key words and visuals whereas *The Electric Company* did not have consistency in this area.

Martha Speaks and *WORDGIRL* clearly adhered to Mayer's (2009) first set of principles by avoiding excessive cognitive processing opportunities for its viewers.

Coherence and signaling principles were the only two applicable principles for these two shows. Throughout the entire running of each episode with the exception of the first five minutes of one *Martha Speaks* episode, these two shows did not have extra sounds and visuals. Also, both shows highlighted key vocabulary verbally for its viewers.

SuperWHY! also provided its viewers with processing tasks that were not overwhelming. Throughout the entire running of its episodes, *SuperWHY!* did not have extra sounds, visuals, or repetitive captions. Overall, the show also signaled key words and placed key words near matching visuals at the same time. The *Around the World Adventure* (Friedman, 2012) episode, however, had a map with a kangaroo image on the continent of Australia and 'Australia' was printed under the image of kangaroo. Unless students knew that kangaroos are a common animal found in Australia, the proximity of the printed text with the image of the kangaroo may have caused confusion.

Overall, two episodes of *WordWorld* did follow Mayer's (2009) first set of principles with the exception of the redundancy principle, which was not applicable to the show. The third episode, *The Christmas Star* (Moody et al., 2015a) did follow most of the applicable first set of principles save for the coherence principle, in which the episode contained extra vocabulary words not strongly tied to the storyline and songs that appeared unnecessary.

Mayer's (2009) second set of principles addresses the issue of efficiently managing essential material so that viewers can better learn the information: a) segmenting, b) pre-training, and c) modality. *Between the Lions* did present material in parts. The show's 'un-people' cartoon segment was an example of explicitly teaching students the use of prefixes to change the meaning of a word and ultimately, a storyline.

Two of its episodes did not pre-teach the skills, but they did alert students at the start of the show what the students were about to learn and the episodes taught those skills within the show's running time. Lastly, the show did not consistently adhere to the modality principle as some spoken key words did not consistently have matching visuals.

Overall, *Martha Speaks* and *WORDGIRL* did adhere to Mayer's (2009) second set of principles if they applied to the episode. In all three episodes of each show, the show introduced and summarized key vocabulary with one *Martha Speaks* episode pre-teaching the episode's key words. The modality principle did not apply to *WORDGIRL*. The modality principle mostly did not apply to *Martha Speaks*; however, when it did, *Martha Speaks* did have matching visuals with spoken relevant words.

SuperWHY! followed the second set of principles allowing students to better process the material presented. In all three episodes, *SuperWHY!* presented information and skills in parts. The show did not pre-teach, but at the start of each episode, the show did present to its viewers information that they were about to learn. The show also consistently provided matching graphics with spoken key vocabulary.

Similar to *SuperWHY!*, *WordWorld*'s data indicated that the show fostered students' ability to process relevant information well. It did not pre-teach, but it did present and teach skills in parts and it provided matching graphics with spoken key vocabulary.

The Electric Company did not consistently adhere to Mayer's (2009) second set of principles. Its episodes did not pre-teach or introduce learning concepts to its viewers. Data also found inconsistencies in presenting information in manageable parts and in providing matching visuals with key vocabulary.

Mayer's (2009) last set of principles provides students with greater opportunities to synthesize newly learned material with background knowledge: a) multimedia, b) personalization, and c) voice. To aide with synthesis of prior and new knowledge, all six shows used a conversational tone with human voices. Regarding the multimedia principle of presenting words with their matching graphics, results varied across shows. This principle was not applicable for *Martha Speaks* and *WORDGIRL*. *SuperWHY!* and *WordWorld* did adhere to this principle; however, *The Electric Company* and *Between the Lions* were inconsistent in showing words with matching visuals.

CHAPTER 5:

DISCUSSION

Schools have the burden of addressing the learning needs of a growing diverse group of learners, including students who have a documented disability. Reading disabilities are common amongst students identified with a specific learning disability. In fact, 80% of the special needs population has reading deficits (Therrien & Hughes, 2008). Television can potentially be a tool in helping students with reading disabilities considering that according to researchers such as Watkins (1985), television viewing has been known to be major life activity of children.

With the assumption that students actively view and engage with the messages communicated through television (Lorch & Anderson, 1979) and with the understanding that students who have a specific learning disability receive messages from and interact with the world around them in a manner uniquely different from their general education peers, the purpose of this study was to conduct a content analysis of the content of current children's television programs to determine the programs' ability to address the needs of students with a specific learning disability in reading. The main research question of my investigation was: how does current children's educational television programming address the learning needs of students with a specific learning disability in reading? The subquestion that helped answer the main objective asked: a) What research-based instructional strategies and program characteristics such as audio and visual cues used by television programming can foster reading skill development for students with a specific learning disability in reading?

Results of my investigation indicate that current programming aimed at promoting reading skill development has the capability in achieving its lesson objectives not only for the general education population but also for students who have a specific learning disability in reading. Data from all six examined shows demonstrated the evidence of the existence of multiple research-based strategies proven in the classroom setting to foster reading progress in students who have a learning disability in reading. In terms of adhering to Mayer's (2009) multimedia principles, results per episode and per show varied indicating the need for improving the use of audio and visual elements for students with disabilities' ability to access the educational content of television programming.

Individual Show Conclusions

WordWorld's primary literacy focus was the alphabetic principle. The show demonstrated evidence of various research-based strategies every five minutes with the most commonly used strategies having been segmentation, teacher modeling, elaboration, and questioning. The consistent use of these proven strategies throughout the show indicated the show's strong potential in its ability to teach the learning disabled population. Especially with modeling the steps of building and reading of key words, *WordWorld* provided multiple examples within each episode in demonstrating the letter-sound relationships of words and in demonstrating the principle that letters create words. The matching visuals of words also increased the potential of vocabulary gains in students. The show's brevity, simplicity, and provision of constant cues to key learning moments along with positive reinforcement when those moments occurred helped beginning readers easily understand skills taught.

Since the nature of the program involved the visuals of words created by their letters, extra words not relevant to the storyline may have caused confusion for some learners if too much visual and mental attention were given to them, thereby possibly hindering students' ability to fully focus and learn the focus skills of the episode. On the other hand, if learners were able to handle the extra visuals, there was greater possibility that the lessons of the alphabetic principle were reinforced.

WORDGIRL and *Martha Speaks*'s major objective was building vocabulary for students. Both shows used a variety of research-based strategies every five minutes with the most used being task difficulty control, elaboration, and teacher modeling. The shows' well-organized, simple program format and constant use of key words within the context of the storyline maintained the focused goal of building vocabulary by reinforcing meaning and by also assisting with comprehension of the show's storylines. Also, *WORDGIRL* and *Martha Speaks*'s deliberate use of advanced organizers in the sense that prior to each of its episode, the show alerted its learners to focus on certain vocabulary, prepared students for key learning moments. Though *WORDGIRL* did not adhere to Mayer's (2009) Multimedia Pre-Training Principle as it did not explicitly define its episodes' key words prior the episodes storyline beginning, the show, nonetheless, had a strong potential in teaching vocabulary to diverse learners because of the show's multiple use of key words within the context of its storylines. On the contrary, *Martha Speaks*, though not consistently and not in a consistent manner across and within studied episodes, not only pre-taught key words, but the show also summarized key words at the end of its episodes, thereby providing a stronger opportunity for students to manage relevant information.

Though *The Electric Company* and *Between the Lions* exhibited the use of multiple research-based strategies every five minutes within each of its episodes, their program format and program elements may distract students from fully accessing their educational content. Both shows exhibited an unclear reading skill focus with the skill focus suddenly changing sometimes mid-episode or towards the end of the episode. Though there was evidence of adhering to Mayer's (2009) multimedia principles, thereby aiding viewers in learning the essential material, their adherence was inconsistent. Both shows' episodes contained extra graphics and sounds such as the overuse of songs, beat-boxing music, or repetitive printed text on screen that could possibly over-stimulate viewers and distract them from learning key content. Such overuse seemed not only ineffective in teaching skills but also irrelevant, thereby wasting valuable airing time.

During the first viewing of *SuperWHY!*, the show appeared to be sporadic and difficult to follow. In fact, it took several viewings of the show to understand the program format and story flow and therefore, to more fully grasp the lessons presented within the show. Once the program format was understood, this study found that out of the six shows examined, *SuperWHY!* demonstrated the strongest potential in positively impacting learners who have a specific learning disability in reading. Every research-based strategy was represented at some point during each of the three episodes. The most common strategies included questioning, teacher modeling, and accessing prior knowledge. The show often used the strategies of sequencing and segmentation as well. Almost always aligning with Mayer's (2009) multimedia principles, the show's overall multimedia presentation demonstrated audio and visual elements that fostered a strong literacy environment. Lastly, *SuperWHY!* characters constantly engaged with its viewers,

requiring students to mentally engage with skill tasks in order to not only practice reading skills but also to problem solve.

Connection to Theoretical Framework

The theory of active viewing (Lorch & Anderson, 1979) informed this investigation of television's ability to serve as an instructional resource. Every episode of each show assumed that its viewers would be actively engaged with its content. This assumption was evidenced by the existence of research-based strategies interwoven throughout the episodes' running time. Additionally, strategies naturally called forward a response from the viewers. Active viewing theory was explicitly manifested in shows such as *WordWorld* and *SuperWHY!* whose dialogue incorporated moments when characters spoke directly to the audience and moments when the show required an active, thoughtful response to learning tasks. Although I did not use disability theory as a way to frame my research, I understand that using disability theory may have provided readers with a better understanding of my study.

Conclusion

In conclusion, this investigation found that current children's television programming has the potential in addressing reading deficits in students with a specific learning disability. Each examined show contained evidence of research-based strategies that have been proven in the classroom setting for this special needs population. Findings of this research, however, indicate the need to improve children's programming's ability to foster a stronger literacy environment by using audio and visual elements in a manner that would best support the use of the research-based strategies. The use of the strategies

alone may not be enough to help students gain the educational content from the shows; however, with use and consideration of helpful multimedia elements, students may be able to better grasp the learning material from television shows.

The findings of this study, therefore, imply the need for changes to policy and practice surrounding the production of children's television programming. Though the examined episodes demonstrated the use of research-based practices, a policy requiring that every children's educational television program utilize proven strategies may help improve the quality of such programming. More importantly, being intentional in incorporating proven strategies may help improve the accessibility of the programming's educational content for a more diverse audience.

As noted earlier, this investigation proves the need for strong consideration of Mayer's (2009) multimedia principles in order to assist with creating a multimedia learning environment that would support the use of research-based strategies so that students could fully grasp the learning content. In their continued study on active viewing theory, Anderson and Lorch (1983) laid out their theory's premises which are based on the connection between visual attention and comprehension. Two of the theory's premises speak to the idea that the viewer's ability and interest in the program determines his or her level of sustained attention and the thought that visual and audio elements can call back a viewer's attention. Research-based strategies without a supportive multimedia environment, therefore, may not be as effective as when appropriate visual and audio elements are present. In fact, this study found that though research-based strategies are evident within an episode, unnecessary visual and audio elements that appear to be incorporated more for purposes of entertainment than

supporting a learning environment may cause confusion during learning opportunities. Being more deliberate with creating an effective multimedia setting where audio and visual elements support strategies can prove to be very powerful in achieving a show's educational objectives.

Anderson and Lorch (1983) also discussed the role of the development of a child's viewing schemata as it relates to the child's ability and motivation to stay attentive during the viewing process. They found that children's visual attention, which is necessary for learning to occur, increases as they gain more world experiences, an increase in cognitive processing, and an increase in familiarity with television structures and elements. Moreover, they noted an increase in viewing schemata provides a stronger foundation in gaining a stronger educational impact from television in a 'normally developing child.' Though the results of this study found that shows often called for the need for students to access their prior knowledge in order to make more meaningful connections to the episodes and to comprehend the storyline and their learning content, further examination of producing television content so that it is more accessible by increasing the viewing schemata in its audience, especially for the students who are not 'normally' developing, is important. Therefore, if educators choose to use educational television shows as instructional tools, this study also implies the need for educators to select shows that are appropriate to students' developmental level and the need for educators to prepare their students to be involved learners through pre-teaching of any background knowledge in order that the program's educational content has a greater opportunity for learning impact.

My investigation also implies the need for educators such as curriculum developers to closely examine the educational content and program structure of television shows designed to enhance literacy skill development. Shows such as *SuperWHY!* that demonstrate the use of proven classroom-based strategies consistently throughout their episodes while fostering an effective media literacy environment are key in determining the potential of such media as being classroom resources in aiding literacy progress. This further indicates the need for curriculum developers and administration to include professional development for teachers in order for effective incorporation of television programming within lessons. Training could include how to increase student viewing schemata, how to check for understanding of an episode and its skills being taught, how to relate an episode's key vocabulary and storyline to real life context, and how to develop extension activities.

My study's findings not only imply the importance of educators aiding the learning process of students during television viewing, but the findings also indicate the need for parents to be involved in helping their children gain educational skills. Every program show examined in this study has a website that gives parents and teachers access to resources such as activities, reading tips, and lesson plans specific to episodes. Almost every show gives parents and teachers an overview of the show, outlining key literacy skill foci. Parents are particularly empowered to support the show's teaching of reading skills through use of shows' recommended parent tips and activities such as asking their child to make predictions, re-emphasizing key learning segments within an episode, and extending the skills taught by an episode within their child's daily routine.

This study is limited in that it did not investigate the impact of television programming on student achievement and progress. Study findings, therefore, also indicate the need for further research to determine to what extent do current children's educational programming improves the reading skill development in students with a specific learning disability in reading. Extended research can include the measurement of growth as indicated by the difference in scores of pre-tests and post-tests of skills related to the televised shows.

Additionally, this study leads the way for continued research in all children's television programming, to include not only educational programming, but also programming that focuses on prosocial content, for its ability to foster growth in students who have been identified with other disabilities such as autism and intellectual disabilities. For example, future research can include a comprehensive study on autism, on the learning process of students identified with this disability, and on strategies proven to be effective for this population in the classroom. Researchers can, then, conduct a content analysis of a sample of shows that are focused on social skill development to determine the use of any proven classroom research-based strategies and by using Mayer's (2009) principles, researchers can determine the shows' ability to foster effective media learning environments. My study's methodology can also be applied to other future research topics such as the study of television programming's ability to serve as a tool to aide progress for students with dyslexia. More focused research on television's ability to serve as a meaningful and effective resource for diverse learners will ultimately result in more creative quality programming designed to proactively and intentionally teach its educational content to a wider viewing audience.

REFERENCES

Aaron, P. G., Joshi, M., & Williams, K. A. (1999). Not all reading disabilities are alike. *Journal of Learning Disabilities, 32*(2), 120-137.

Abelman, R. (2004). TV literacy and academic/artistic giftedness: Understanding time leaps and time lags. *Roeper Review, 26*(2), 85-89.

Alexander, A., Hoerrner, K., & Duke, L. (1998). Children and television: What is quality children's television? *The Annals of the American Academy of Political and Social Science, 557*, 70-164.

Altheide, D. (1996). *Qualitative media analysis*. Thousand Oaks, CA: Sage.

Americans with Disabilities Act, 28 CFR § 35.160 (2010).

Anderson, D., Huston, A., Schmitt, K., Linebarger, D., & Wright, J. (2001a). Academic achievement. *Monographs of the Society for Research in Child Development, 66*(1), 36-66.

Anderson, D., Huston, A., Schmitt, K., Linebarger, D., & Wright, J. (2001b). Creativity. *Monographs of the Society for Research in Child Development, 66*(1), 67-78.

Anderson, D. & Lorch, E. (1983). Looking at television: Action or reaction? In J. Bryant & D. Anderson (Eds.), *Children's understanding of television: Research on attention and comprehension* (pp. 1-33). New York: Academic Press.

Bazeli, M., & Robinson, R. (1997). Creating critical thinkers. In R. Griffin, J. Hunter, C. Schiffman, & W. Gibbs (Eds.), *VisionQuest: Journeys toward visual literacy* (pp. 267-274). University Park, PA: International Visual Literacy Association.

Behrmann, M. (1994). Assistive technology for students with mild disabilities. *Intervention in School & Clinic, 30*(2), 70-83.

Berkeley, S., Scruggs, T., & Mastropieri, M. (2010). Reading comprehension instruction for students with learning disabilities, 1995-2006: A meta-analysis. *Remedial and Special Education*, *31*(6), 423-436.

Bittman, M., Rutherford, L., Brown, J., & Unsworth, L. (2011). Digital natives? New and old media and children's outcomes. *Australian Journal of Education*, *55*(2), 161-175.

Blumenfeld, P., Soloway, E., Marx, R., Krajcik, J., Guzdial, M., & Palincsar, A. (1991). Motivating project-based learning: Sustaining the doing, supporting the learning. *Educational Psychologist*, *26*(3-4), 369-398.

Bogatz, G., & Ball, S. (1971). *The second year of Sesame Street: A continuing education.* Princeton, NJ: Educational Testing Service.

Bowen, G. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, *9*(2), 27-40.

Brigham, R., Berkeley, S., Simpkins, P., & Brigham, M. (2007). Reading comprehension instruction. *Current Practice Alerts*, *12*(12), 1-4. Retrieved from http://TeachingLD.org/alerts

Brooks, A. (2014). Information literacy and the flipped classroom. *Communications in Information Literacy*, *8*(2), 225-235.

Bryant, J., & Zillman, D. (2002). *Media effects: Advances in theory and research*. Mahwah, NJ: Lawrence Erlbaum Associates.

Calvert, S., Kotler, J., Kuhl, A., & Riboli, M. (2001). *Impact of the children's television act on children's learning*. Paper presented at the annual meeting of the International Communication Association, Washington, D.C.

Chard, D., Ketterlin-Geller, L., Baker, S., Doabler, C., & Apichatabutra, C. (2009). Repeated reading interventions for students with learning disabilities: Status of the evidence. *Exceptional Children, 75*(3), 263-281.

Children's Television Act of 1990, Pub. L. 101–437 (1990).

Coffey, A., & Atkinson, P. (1996). *Making sense of qualitative data: Complementary research strategies*. Thousand Oaks, CA: Sage.

Cole, C., Labin, D., & del Rocio Galarzo, M. (2008). Begin with the children: What research on Sesame Street's international coproductions reveals about using media to promote a more peaceful world. *International Journal of Behavioral Development, 32*(4), 359-365.

Cortes, C., & Richardson, E. (1983). Why in the world: Using television to develop critical thinking skills. *The Phi Delta Kappan, 64*(10), 715-716.

Council for Exceptional Children. (2014). *Standards for evidence-based practices in special education*. Arlington, VA: Author.

Crawley, A., Anderson, D., Santomero, A., Wilder, A., Williams, M., Evans, M., & Bryant, J. (2002). Do children learn how to watch television? The impact of extensive experience with *Blues Clues* on preschool children's television viewing behavior. *Journal of Communication, 52,* 264-280.

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks, CA: Sage.

Crockett, J. B., & Yell, M. L. (2008). Without data all we have are assumptions: Revisiting the meaning of a free appropriate public education. *Journal of Law & Education, 37*(3), 381-392.

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. Thousand Oaks, CA: Sage.

Dumlao, R. (2003). Tapping into critical thinking: Viewer interpretations of a television conflict. *Simile, 3*(1), 1-16.

EDC's Center for Children and Technology. (2004). *Report: Television goes to school: The impact of video on student learning in formal education.* Washington, DC: Corporation for Public Broadcasting.

Federal Communications Commission. (1991). *Report and order: In the matter of policies and rules concerning children's television programming*. Retrieved from https://transition.fcc.gov/Bureaus/Mass_Media/Orders/1996/fcc96335.htm

Federal Communications Commission. (1996). The Three-Hour Rule, FCC No. 96–335.

Friedman, B. (2012). Around the world adventure. In A. Santomero (Producer), *SuperWHY!* Retrieved from https://www.youtube.com/watch?v=cCVSKY4e5co

Friedman, T. L. (2007). *The world is flat* (3rd ed.). New York, NY: Thomas L. Friedman/Picador.

Ganz, S., Samson, A., & Raddatz, R. (2012). A world without WordGirl Part 1 and 2. In D. Forte (Producer), *WORDGIRL*.

Gersten, R., Fuchs, L., Williams, J., & Baker, S. (2001). Teaching reading comprehension strategies to students with learning disabilities: A review of research. *Review of Educational Research, 71*(2), 279-320.

Glesne, C. (2016). *Becoming qualitative researchers: An introduction*. Boston, MA: Pearson.

Golos, D. (2010). Deaf children's engagement in an educational video in American sign language. *American Annals of the Deaf, 155*(3), 360-368.

Graves, S. (1976). *Television's impact on children: Roles for research and policy*. Paper presented at the annual meeting of the Telecommunications Policy Research Conference, Airlie, Virginia. Retrieved from https://archive.org/stream/ERIC_ED125597#page/n0/mode/2up

Greenberg, B. (1986). Minorities and the mass media. In J. Bryant & D. Zillman (Eds.), *Perspectives on mass media* (pp. 165-188). Hillsdale, NJ: Erlbaum.

Hamberg, J. (2012a). Jasper's cowboy wish. In A. Santomero (Producer), *SuperWHY!*

Hamberg, J. (2012b). Naila and the magic map. In A. Santomero (Producer), *SuperWHY!*

Hargis, C. H., & Gickling, E. E. (1975). The effectiveness of TV in teaching sight words to students with learning disabilities. *Journal of Learning Disabilities, 8*(1), 44-46.

Herreid, C., & Schiller, N. (2013). Case studies and the flipped classroom. *Journal of College Science Teaching, 42*(5), 62-66.

Hirsh, P. (1977). Public policy toward television: Mass media and education in American society. *The School Review, 85*(4), 481-512.

Hutson, A., Watkins, B., & Kunkel, D. (1989). Public policy and children's television. *American Psychologist, 44*(2), 424-433.

Individuals with Disabilities Education Act, 20 U.S.C. § 1400 (2004).

Jankowski, G. (1986, April). *Television and teachers: Educating each other.* Speech presented at the Broadcast Education Association Annual Convention, Dallas, Texas.

Jiménez, T. C., Graf, V. L., & Rose, E. (2007). Gaining access to general education: The promise of universal design for learning. *Issues in Teacher Education, 16*(2), 41-54.

Johnson, E., Humphrey, M., Mellard, D., Woods, K., & Swanson, H. (2010). Cognitive processing deficits and students with specific learning disabilities: A selective meta-analysis of the literature. *Learning Disability Quarterly, 33*(1), 3-18.

Jordan, A. (2004). The three-hour rule and educational television for children. *Popular Communication, 2*(2), 103-118.

Kelly, R. (1985). Video and language learning: An approach to viewing comprehension. *RELC Journal, 16*(1), 52-67. doi: 10.1177/003368828501600105

Kingsley, K., & Boone, R. (2006). Effects of multimedia software on achievement of middle school students in an American history class. *Journal of Research on Technology in Education, 41*(2), 203-221.

Kinzer, C. (2010). Considering literacy and policy in the context of digital environments. *Urbana, 88*(1), 51-61.

Krippendorff, K. (2013). *Content analysis: An introduction to its methodology.* Thousand Oaks, CA: Sage.

Kunkel, D. (1991). Crafting media policy: The genesis and implications of the Children's Television Act of 1990. *American Behavioral Scientist, 35*(2), 181-202.

Kunkel, D., & Canepa, J. (1994). Broadcasters' license renewal claims regarding children's educational programming. *Journal of Broadcasting and Electronic Media, 38*(4), 397-416.

Kunkel, D., & Watkins, B. (1987). Evolution of children's television regulatory policy. *Journal of Broadcasting and Electronic Media*, *31*(4), 367-389.

Labuschagne, A. (2003, March). Qualitative research—airy fairy or fundamental? *The Qualitative Report, 8*(1). Retrieved from http://www.nova.edu/ssss/QR/QR8-1/.html

Lavoie, D. (1995). Harness television power to improve problem solving & conceptual understanding in your biology classroom. *The American Biology Teacher*, *57*(7), 402-407.

Linebarger, D., Kosanic, A., Greenwood, C., & Doku, N. (2004). Effects of viewing the television program *Between the Lions* on the emergent literacy skills of young children. *Journal of Educational Psychology*, *96*, 297-308.

Linebarger, D., & Piotrowski, J. (2010). Structure and strategies in children's educational television: The roles of program type and learning strategies in children's learning. *Child Development*, *81*(5), 1582-1597.

Lorch, E., and Anderson, D. (1979). The relationship of visual attention to children's comprehension of television. *Child Development*, *50*(3), 722-727.

Mar, R. A., Tackett, J. L., & Moore, C. (2010). Exposure to media and theory-of-mind development in preschoolers. *Cognitive Development*, *25*, 69-78.

Martin, D., Martin, M., & Carvalho, K. (2008). Reading and learning-disabled children: Understanding the problem. *The Clearing House*, *81*, 113-117.

Maxwell, J. (2013). *Qualitative research design*. Thousand Oaks, CA: Sage.

Mayer, R. (2009). *Multi-media learning* (2nd ed.). New York, NY: Cambridge University Press.

Mayring, P. (2000). Qualitative content analysis [28 paragraphs]. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research, 1*(2), Art. 20. Retrieved from http://nbn-resolving.de/um:nbn:de:0114-fqs0002204

Merriam, S. B. (2009). *Qualitative research: A guide to design and implication.* San Francisco, CA: Jossey-Bass.

Moody, J., Yerkes, A., Danko, D., & Mason, T. (2015a). The Christmas star. In S. Hollenberg (Producer), *WordWorld*.

Moody, J., Yerkes, A., Danko, D., & Mason, T. (2015b). Happy birthday, dog. In S. Hollenberg (Producer), *WordWorld*.

Moore, D. (2010). Educational television. In T. Hunt, J. Carper, T. Lasley, & C. Raisch (Eds.), *Encyclopedia of educational reform and dissent* (pp. 318-320). Thousand Oaks, CA: Sage.

Moran, K. (2006). The global expansion of children's television: A case study of the adaption of Sesame Street in Spain. *Learning, Media and Technology, 31*(3), 287-300.

National Endowment for Children's Educational Television Act of 1989. (1989). S. 797—101st Congress. Retrieved from https://www.govtrack.us/congress/bills/101/s797.

Neff, M. L. (1994). *Defining "educational and informational" for Children's television programming*. Paper presented at the 77th Annual Meeting of the Association for Education in Journalism and Mass Communication, Atlanta, GA. Retrieved from http://eric.ed.gov/?id=ED374495

Parrish, B., Frager, A., & Thompson, L. (1982). *Television in the classroom: Critical viewing/thinking skill development*. Paper presented at the 27th Annual Meeting of the International Reading Association, Chicago, IL. Retrieved from http://eric.ed.gov/?q=Television+in+the+classroom%3a+Critical+viewing%2fthinking+skill+development&id=ED216337

Penuel, W. R., Bates, L., Gallagher, L., Pasnik, S., Llorente, C., Townsend, E., Hupert, N., Dominguez, X., & VanderBorght, M. (2011). Supplementing literacy instruction with a media-rich intervention: Results of a randomized controlled trial. *Early Childhood Research Quarterly*, *27*, 115-127.

Pullen, P., & Lloyd, W. (2008). Phonics instruction. *Current Practice Alerts*, *14*, 1-4. Retrieved from http://TeachingLD.org/alerts

Raffa, J. (1983). Television: The newest moral educator? *Phi Delta Kappan*, *65*(3), 214-215.

Razel, M. (2001). The complex model of television viewing and educational achievement. *Journal of Educational Research*, *94*(6), 371-379.

Reale, W. (2009a). Lights, camera, beetles! In K. Fowler (Producer), *The Electric Company*.

Reale, W. (2009b). Trouble afoot. In K. Fowler (Producer), *The Electric Company*.

Rebora, A. (2011, April 4). Algebra, reality-TV style. *Education Week*, 31. Retrieved from http://www.edweek.org/tsb/articles/2011/04/04/02getthemath.h04.html

Reeves, B., & Thorson, E. (1986). Watching television: Experiments on the viewing process. *Communication Research*, *13*(3), 343-361.

Register, D., Darrow, A., Standley, J., & Swedberg, O. (2007). The use of music to enhance reading skills of second grade students and students with reading disabilities. *Journal of Music Therapy*, *44*(1), 23-37.

Reid, L. N. (1979). The impact of family group interaction on children's understanding of television advertising. *Journal of Advertising*, *8*(3), 13-19.

Richert, R., Robb, M., & Smith, E. (2011). Media as social partners: The social nature of young children's learning from screen media. *Child Development*, *82*(1), 82-95.

Rose, G. (2012). *Visual methodologies: An introduction to researching with visual materials.* London, England: Sage.

Ross, W. (2011). Boost retention by leveraging multiple intelligence theory in your presentations. *Eli Journals*, 14-16.

Saldana, J. (2013). *The coding manual for qualitative researchers*. Thousand Oaks, CA: Sage.

Samaniego, C., & Pascual, A. (2007). The teaching and learning of values through television. *Review of Education*, *53*, 5-21.

Scarborough, K. (2014a). Dinosaurs in trouble. In S. Wall (Producer), *Martha Speaks*.

Scarborough, K. (2014b). Martha the hero maker. In S. Wall (Producer), *Martha Speaks*.

Scarborough, K. (2014c). Puppy skits. In S. Wall (Producer), *Martha Speaks*.

Seok, S., DaCosta, B., Kinsell, C., Poggio, J., & Meyen, E. (2010). Computer-mediated intersensory learning model for students with learning disabilities. *TechTrends*, *54*(2), 63-71.

Shin, N. (2004). Exploring pathways from television viewing to academic achievement in school age children. *Journal of Genetic Psychology*, *165*(4), 367-381.

Stein, A., & Friedrich, L. (1975). Impact of television on children and youth. In E. M. Hetherington (Ed.), *Review of Child Development Research* (pp. 183-256). Chicago, IL: University of Chicago Press.

Stein, L., & Prewett, A. (2009). Media literacy education in the social studies: Teacher perceptions and curricular challenges. *Teacher Education Quarterly*, *36,* 131-148.

Stemler, S. (2001). An overview of content analysis. *Practical assessment, research and evaluation*, *7*(17). Retrieved from http://PAREonline.net/getvn.asp?v=7&n=17.

Stiles, N. (2000). The lost rock. In J. Stoia (Producer), *Between the Lions.*

Swanson, H. (1999). Reading research for students with LD: A meta-analysis of intervention outcomes. *Journal of Learning Disabilities*, 32(6), 504-532.

Tankersley, J. (2015, June 7). Study: Kids can learn as much from 'Sesame Street' as from preschool. *The Washington Post*. Retrieved from http://www.washingtonpost.com

Therrien, W., & Hughes, C. (2008). Comparison of repeated reading and question generation on students' reading fluency and comprehension. *Learning Disabilities: A Contemporary Journal*, *6*(1), 1-16.

Thompson, F., & Austin, W. (2003). Television viewing and academic achievement revisited. *Education*, *124*(1), 194-202.

Title II of the American Disabilities Act of 1990, 28 CFR 35. 160 (1990).

Torgesen, J. (1986). Learning disabilities theory: Its current state and future prospects. *Journal of Learning Disabilities*, *19*(7), 399-407.

Twenty-first Century Communications and Video Accessibility Act of 2010, Pub. L. No. 111-260 (2010).

U.S. Department of Education, National Center for Education Statistics, (2009). *Reading 2009: National assessment of educational progress at grades 4 and 8* (NCES 2010 - 458). Retrieved from http://nces.ed.gov/nationsreportcard/pdf/main2009/2010458.pdf

Wade, E., Boon, R. T., & Spencer, V. G. (2010). Use of Kidspiration software to enhance the reading comprehension of story grammar components for elementary-age students with specific learning disabilities. *Learning Disabilities—A Contemporary Journal, 8*(2), 31-41.

Wanzek, J. & Roberts, G. (2012). Reading interventions with varying instructional emphases for fourth graders with reading difficulties. *Learning Disability Quarterly*, 35(2), 90-101.

Watkins, B. (1985). Television viewing as a dominant activity of childhood: A developmental theory of television effects. *Critical Studies in Mass Communication, 2*, 323-337.

What Works Clearinghouse. (2010, September). *Improving reading comprehension in kindergarten through 3rd grade.* Retrieved from http://ies.ed.gov/ncee/wwc/PracticeGuide/14

What Works Clearinghouse. (2013a, January). *Peer-assisted learning strategies*. Retrieved from http://ies.ed.gov/ncee/wwc//InterventionReport/619

What Works Clearinghouse. (2013b, January). *WWC review of the report: Same-Language-Subtitling (SLS): Using subtitled music video for reading growth*. Retrieved from http://ies.ed.gov/ncee/wwc/Study/73162

What Works Clearinghouse. (2013c, July). *Read naturally*. Retrieved from http://ies.ed.gov/ncee/wwc/EvidenceSnapshot/407

What Works Clearinghouse. (2013d, November). *Reading mastery*. Retrieved from http://ies.ed.gov/ncee/wwc/EvidenceSnapshot/416

Name of Program:_____
Episode Title:_____

Data Collection Protocol for Evidence of Reading Strategies

Time (min.)	Raw Data	Open Codes	Axial/Thematic Codes w/descriptions of codes	Investigator notes/comments/reflections
1-5				
6-10				
11-15				
16-20				
21-25				
26-30				

Research-based Reading Strategies used in the Classroom

Based on findings from the following studies: Swanson (1999), Gersten et. al. (2001), Brigham et. al. (2007), Berkeley et. al. (2010), and the 2010 IES Practice Guide on *Improving reading comprehension in kindergarten through 3rd grade*

Strategy	Description
1. sequencing/control of task difficulty	task is broken down, use of prompts and the eventual fading of prompts, the task difficulty matches student's ability
2. segmentation	targeted skill is broken down into smaller parts and/or synthesized
3. advanced organizers	learners are told to focus on specific information, are given prior information about the task, objectives are communicated prior to lesson
4. questioning	learners ask questions, teacher asks questions, students and/or teacher engage in response exchange
5. elaboration and text enhancements	additional information about the concepts, steps, graphic organizers, vocabulary instruction, embedded questions
6. teacher modeling	modeling of (strategy) steps by teacher in how to solve problem
7. strategy use cues	reminders to use strategies, use of 'think alouds'
8. predicting/accessing prior knowledge	students use background knowledge and context clues to build meaning of material and make logical predictions
9. inferring	students create essential information that is not explicitly stated in order to build meaning, e.g. teacher teaches to look for key terms so that students can infer
10. summarizing/retelling	the retelling of main events or major points with the use of teacher prompts, if needed

Name of Program:_____

Episode Title:_____

Data Collection Protocol for Program Elements using Principles of Excessive Processing (Mayer, 2009)

Time (min.)	Coherence Principle - extra graphics, sounds, and words are not present	Signaling Principle - key visuals and words are highlighted	Redundancy Principle- repetitive captions of animated works are omitted	Spatial Contiguity Principle - relevant words near their matching visuals	Temporal Contiguity Principle - words and images shown at the same	Investigator notes/comments/ reflections
1-5						
6-10						
11-15						
16-20						
21-25						
26-30						

Name of Program:_____
Episode Title:_____

Data Collection Protocol for Program Elements using Principles on Managing Relevant Information (Mayer, 2009)

Time (min.)	Segmenting Principle - presentation of essential information in parts	Pre-training Principle - pre-teaches key lesson concepts	Modality Principle - use of spoken words with pictures	Investigator notes/comments/reflections
1-5				
6-10				
11-15				
16-20				
21-25				
26-30				

Name of Program:_____
Episode Title:_____

Data Collection Protocol for Program Elements using Principles on Organizing and Synthesizing Old and New Information (Mayer, 2009)

Time (min.)	Multimedia Principle - both pictures and words are presented	Personalization Principle – use of a conversational style of speech	Voice Principle - use of a human voice as opposed to machine voice	Investigator notes/comments/reflections
1-5				
6-10				
11-15				
16-20				
21-25				
26-30				