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TIERED VOCABULARY AND EDUCATIONAL TELEVISION: A QUANTITATIVE CONTENT ANALYSIS OF MAJOR BROADCAST TELEVISION NETWORKS

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ABSTRACT

TIERED VOCABULARY AND EDUCATIONAL TELEVISION:
A QUANTITATIVE CONTENT ANALYSIS OF MAJOR BROADCAST TELEVISION NETWORKS

Kimberly DiMarco

Researchers have studied children's exposure to television and the impact it has on children's academic development, and have discovered that educational television programs may positively influence children's vocabulary growth (Fuenzalida, 2017; Heintz & Wartella, 2012; Larson & Rhan, 2015; Linebarger, Moses, Liebeskind, & McMenamin, 2013; Neuman, Wong, Flynn, & Kaefer, 2019; Neuman, Samudra, Wong, & Kaefer, 2019, Peters & Webb, 2018; Williams & Thomas, 2017). However, few studies have been conducted examining the types of vocabulary words contained in television programming and the frequencies of which these words occur. This study attempted to help enhance the literature by executing a quantitative content analysis of tiered academic vocabulary words found within broadcast television networks' Saturday morning educational programs. Through the identification of words as either Tier I, Tier II, or Tier III vocabulary within educational programs, aired on major broadcast television networks (CBS, NBC, ABC, FOX), this study contributes to research regarding television and vocabulary acquisition. By discovering the frequencies of tiered academic vocabulary presented throughout free educational television programs, this analysis uncovered proportions of Tier I vocabulary words representing 68.7% ($\pm$3%) of all tiered vocabulary words recorded from 990 instances across 25 shows and four network channels. The focus of this study, which considered the existence of Tier II vocabulary

words, represented 20.4% (±3%). Tier III vocabulary words represented 10.9% (±2%)**.** As a network, NBC offers viewers the most evidence of Tier II words for educational programming between 7:00am and 12:00pm on Saturday mornings with an average of 10 Tier II words per show.

DEDICATION

This is dedicated to my parents, Paul and Karen Lawrence. Up until their passing, they devoted their lives to providing me with constant unconditional love and support and taught me to never stop reaching for the stars. Furthering my education was extremely important to my parents, and as the only member of our family to have graduated from higher education institutions, the completion of this work signifies an accomplishment for us all.

ACKNOWLEDGEMENTS

Attempting this arduous program and completing this work could not have been possible without the support from many important people over the past several years. The combination of mentors, friends, and most importantly, family has given me the strength and resilience to accomplish what I initially believed to be an unattainable goal.

This work would not have been possible without the direction of my mentors, Dr. Sampson and Dr. Brown. I offer many thanks to Dr. Brown for being on my committee and for guiding me to seek the most current research to support my study while also ensuring that my statistical approach was sound. From the moment I viewed Dr. Sampson's introductory video lecture during our "Literacy throughout the Content Areas" course, I was inspired. His passion and joy for teaching was infectious, and his gentle nature and kind spirit provided a sense of comfort during this grueling process. However, it was the Elmo t-shirt he wore during my proposal defense in support of my study that filled me with inspiration and confidence. That simple gesture has been a source of motivation and a positive memory that serves as a reminder of the impact I can make in the lives of my own students.

The demands of maintaining a full-time teaching career while continuing throughout this program were rigorous, however there was one friend and colleague who remained a source of encouragement and support, Rina Hartigan. No matter what new research I discovered throughout my course work, Rina was there with a smile and positive attitude to try out any interventions I discovered and assisted in creating new literacy units of study to help our struggling learners. Rina never opposed any of the ideas I wanted to implement, and she has always remained a compassionate cheerleader in my

corner. The congratulatory card Rina presented to me when I was accepted into the Ph.D. program remains next to my computer and has served as a visual reminder to never give up.

Family is my source of strength, and none of this would have been possible without my loving sons and devoted husband. To my boys, David and Jack, I thank you for giving me endless amounts of uninterrupted hours to work upstairs in the office. You boys helped with the household chores, while also remaining quiet so I could focus and pay attention to my school work. You never complained, never minded me cooking late night dinners, and always gave me the love and encouragement I needed along the way. David helped tremendously by taking on the responsibility of cooking for the family one night each week, and Jack was always there with a hug and words of encouragement. I hope my experience throughout this journey has acted as a positive model for them to imitate and serves as motivation while they strive to achieve their own academic and personal endeavors. The person whom I am most grateful for is my loving, selfless husband, John. This would have only remained a potential dream if he hadn't encouraged me to do this for myself, but more importantly, for our family. He provided me with this incredible opportunity and then supported me along the way. He was always by my side, and I could not have attempted any of this without his constant support, praise, and reassurance. John, you fill my life with laughter, security, strength, and above all, endless and unconditional love. Your guidance, your brilliance, and your dedication kept me moving forward, even when my self-doubt crept in. You serve as constant inspiration for our entire family, and you are my favorite everything. I hope I have made you as proud of me as I am as proud to be your wife. TD forever!

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CHAPTER 1 INTRODUCTION

Problem Statement

It has been well documented that children from low socioeconomic status (L-SES) households experience a gap in their vocabulary development which may only widen as these children mature (Linebarger, Moses, Liebeskind, & McMenamin, 2013; Neuman, Wong, Flynn, & Kaefer, 2019; Neuman, Samudra, Wong, & Kaefer, 2019). Socioeconomic status has been identified to account for 42% of variance in a child's rate of vocabulary growth, and students living in low socioeconomic homes have been found to know approximately 6,000 words less than their middle-class peers when entering school (Jalongo & Sobolak, 2010). There is also a plethora of research signifying a relationship between vocabulary and comprehension, resulting in weak overall literacy development for children who lag in vocabulary knowledge (Guo, Wang, Hall, Breit-Smith, & Busch, 2016; Hirsch, 2003; Kucan & Sullivan-Palincsar, 2011; Lane & Allen, 2010; Silverman & Crandel, 2010).

Researchers have studied children's exposure to television and the impact it has on children's academic development, and have discovered that educational television programs may positively influence children's vocabulary growth (Fuenzalida, 2017; Heintz & Wartella, 2012; Larson & Rhan, 2015; Linebarger, Moses, Liebeskind, & McMenamin, 2013; Neuman, Wong, Flynn, & Kaefer, 2019; Neuman, Samudra, Wong, & Kaefer, 2019, Peters & Webb, 2018; Williams & Thomas, 2017). Webb (2011) stated that television is a valuable resource for learning language. As children in L-SES households watch television (Linebarger et al., 2013; Neuman et al., 2019), television has the potential to impact their vocabulary development. However, few studies have been

conducted examining the types of vocabulary words contained in television programming and the frequencies of which these words occur. As television offers the potential to impact vocabulary development, there is a need to investigate words contained within television programs that are free to the public and accessible to all socio-economic status households.

Purpose of the Study

This research attempted to help fill in the gaps in the literature by executing a quantitative content analysis of tiered academic vocabulary words found within broadcast television networks' Saturday morning educational programs. Through the identification of words as either Tier I, Tier II, or Tier III vocabulary within educational programs, aired on major broadcast television networks (CBS, NBC, ABC, FOX), this study can contribute to research regarding television and vocabulary acquisition. By discovering the frequencies of tiered academic vocabulary presented throughout free educational television programs, this analysis uncovered the amount of exposure to each type of word, as presented by specific broadcast television networks, viewers are subjected to.

Is there too much vocabulary to teach? McKeown and Beck pondered this question in 2004 and suggested that teachers choose words from a tiered hierarchy of vocabulary with an emphasis on teaching Tier II words to expand students' vocabulary knowledge because these words occur with a high level of frequency and are found across a multitude of disciplines (Rupley et al., 2012). Tier II words are essential in bridging students' comprehension of various content area subject matter, and since then, numerous studies conducted over the past decade have included Tier II words within their interventions as researchers acknowledged the importance of teaching these words to

students who lack in vocabulary knowledge (Wilson, Nash, & Earl, 2010; Maynard, Pullen, & Coyne, 2010; Pollard-Durodola, Gonzalez, Simmons, Kwok, Taylor, Davis, Kim, & Simmons, 2011; St. John, & Vance, 2014; Collins, Goforth, & Ambrose, 2016; Soto, McKeena, Seven, Madsen, Peters-Sanders, Kelly, & Goldstein, 2020). The significance of exposure to and acquisition of Tier II words for children lacking in vocabulary knowledge cannot be undervalued.

Tier II words are the most important words to teach students because they are the most utilized words that are applicable to all academic subject-matter disciplines and are found across all academic domains (Beck et al., 2013). In recent years, numerous researchers have included Tier II words within their study as part of their intervention and targeted vocabulary words.

Wilson, Nash, and Earl (2010) chose to study the collaborative practice between speech and language therapists and teachers to support vocabulary instruction and learning for students. The researchers chose Tier II words because these words would assist in the researchers utilizing the *robust vocabulary instructional approach*, as created by Beck et al. (2002). They noted Tier II words as having a particular set of criteria, such as words frequently occurring across various domains, words that could be utilized in several ways so that students could make connections to other words and concepts associated with the chosen Tier II word, and finally, for their accuracy in portraying a known concept that students were already familiar with and understood.

In a study that centered around evaluating the effectiveness of rich and basic instruction to incidental exposure of targeted words to first grade students using repeated shared storybook readings was performed by Maynard, Pullen, and Coyne in 2010. The

words they chose to include in their study were Tier II words, as defined by Beck et al. (2002).

Another study that employed shared book readings as an intervention on vocabulary development of young children who were at-risk for delays in their vocabulary was performed by Pollard-Durodola, Gonzalez, Simmons, Kwok, Taylor, Davis, Kim, and Simmons in 2011. 75% of the target vocabulary words the researchers used in their study were Tier II nouns.

In 2014, St. John and Vance examined a small group daily word learning program designed for young children that evaluated students' learning of taught and untaught target vocabulary words. As part of their intervention target word vocabulary, teachers chose 10 Tier II words that met Beck et al.'s (2002) tiered vocabulary criteria.

Collins, Goforth, and Ambrose's (2016) research studied the effectiveness of an Internet-based Speech/Language Pathologist (SLP)-teacher consultation that supported rural teachers' vocabulary instruction to help improve their students' lexical inference skills. Teachers watched a video on how to select vocabulary words for instruction and then were tasked with selecting Tier II words as part of their own instruction for the study.

In 2020, Soto, McKeena, Seven, Madsen, Peters-Sanders, Kelly, and Goldstein investigated a program that compared the words young students were learning at school to the words they were learning at home. The researchers chose to include Tier II vocabulary, and referred to them as 'academic vocabulary' throughout their study. Tier II words were included because they are not typically used in oral speech, are likely to be

found in books, and have the potential to increase the lexicon of young children, which may help them to eventually decode and understand more words as they learn to read.

The relevance of Tier II words to this particular study is supported by the inclusion of Tier II words in vocabulary research that has spanned over a decade. In all the studies mentioned, researchers employed Tier II words as part of their intervention and each cited the significance of including Tier II words for targeted vocabulary. As Tier II words are extremely valuable and important words for children to acquire (Beck et al., 2002, 2013), it is important for research to continue to seek out ways to study Tier II vocabulary and how it can be applied to assist children with vocabulary development. However, after an exhaustive literature search, research that included investigating Tier II vocabulary within free educational broadcast television programs has been extremely limited.

According to Webb (2011), "Comparing the number of encounters with low frequency words in different types of programs is also important because it may indicate how to effectively use television for language learning and provide direction towards optimizing vocabulary learning." (p. 119) This study's intent was to identify which broadcast television network's educational programs offer the greatest opportunity to expose certain types of academic vocabulary to viewers, of whom may be children living in L-SES households. This may be important for children living in L-SES households because studies have discovered that these children spend a significant amount of time watching television (Linebarger et al., 2013). Once the frequencies of tiered vocabulary within broadcast television educational programming has been identified, educators and parents can make informed decisions and recommendations regarding children's

television viewing intake and experiences with television programming, all of which have the possibility of influencing children's vocabulary development.

Theoretical Framework

Fuenzalida's (2017) work revealed that children engage brain activity to construct knowledge as they watch television, making television an active experience rather than passive learning. From a social ecological theoretical standpoint, children interact and learn from their environment, and according to Bronfenbrenner's ecological system theory (HQ, 2013), a child's home is the most immediate environment to influence their development. "Based on ecology, the branch of biology concerned with the interrelationship of organisms and their environments, the ecological systems approach describes the social and cultural aspects of the human environment." (Bronfenbrenner, 2005, p.3)

The ecological theory seeks to explain how the environment influences human development and is concerned with the processes and conditions that oversee the lifelong course of human development in the actual environments in which humans live. Bronfenbrenner's ecological theory serves well as a framework to structure my research as I perform a content analysis of tiered academic vocabulary found within educational programs aired on major broadcast network television.

Socioecological models indicate that the beliefs, attitudes, behaviors and level of socioeconomic status of parents help to construct both social and physical environments within the home which affects the way children behave, and in particular, the amount of screen-time children are exposed to within the household (Maatta et al., 2017). A child's home environment can be considered the microsystem or the layer closest to the child and

contains the structures with which the child has direct contact. According to Bronfenbrenner, the microsystem encompasses the relationships and interactions a child has with his immediate surroundings, and as children are exposed to vocabulary while they view educational television programs within their home environment, this theory guides my research.

Larson and Rhan's (2015) content analysis of Sesame Street's *Word on the Street* segment, employed a social ecological theoretical framework to study their assumption that children's vocabulary development could be positively influenced by the ongoing interactions with children's educational television in their home environment. This study makes a similar assumption, based upon the principles of social ecological theory, that if appropriate tiered vocabulary words, as studied and recommended by Beck et al. (2013), are included in educational television programming found on broadcast television networks, the exposure and teaching of Tier I, Tier II, and Tier III types of words may lead to increased vocabulary growth for all children, but most specifically for L-SES children who have free access to these programs, watch a significant amount of television per week (Linebarger et al., 2013), and frequently view broadcast television educational programs (Rideout, 2011).

Significance of the Study

According to FCC regulations, broadcast networks are required to air a minimum of three hours of educational television weekly (Jordan, 2004). These channels are free to the public ("Broadcast TV Transition: What to Watch For", 2020), and are readily available to L-SES children, who without cable television or streaming service access, may be viewing these programs. Numerous studies have explored the relationship

between children's educational programing and the impact it has on children's vocabulary learning (Heintz & Wartella, 2012; Larson & Rhan, 2015; Linebarger, Moses, Liebeskind, & McMenamin, 2013; Neuman, Wong, Flynn, & Kaefer, 2019; Neuman, Samudra, Wong, & Kaefer, 2019, Peters & Webb, 2018; Williams & Thomas, 2017.), however there have been no studies identified in the literature that have explored Tier I, Tier II, and Tier III academic vocabulary words in educational television programs aired on major broadcast television networks (CBS, NBC, ABC, FOX). According to Beck et al., (2005), Tier II words are of high utility for students in the areas of listening, speaking, reading and writing. Tier II words focus on abstract and complex ideas, and vocabulary researches concur that these words should be highly emphasized when instructional time is limited (Jalongo & Sobolak, 2011).

As few studies exploring academic vocabulary and television outside of broadcast television network educational programming were published, a call for further investigation of tiered words on multiple media was revealed. This leads to a problem for researchers to observe and record what types and frequencies of academic vocabulary (Tier I, Tier II, Tier III words) are found within educational television programs aired on major broadcast television networks (CBS, NBC, ABC, FOX).

This research is a necessary stepping stone in the broader study of television as a teaching tool, and may pave the way for additional avenues of research examining the possible effects of television on vocabulary growth, particularly for children in L-SES households. In addition, this study may lead to further research investigating how educational television may potentially be employed as a tool for vocabulary development. Moreover, after investigating the frequencies of tiered academic vocabulary amongst

broadcast television network educational programming, networks may look to adjust their vocabulary content or explore how their vocabulary is presented and instructed to viewers.

Research Questions

Pilot study research questions:

RQ1

What proportion of television program descriptions are labeled with the genre of educational, educational/informational, or educational plus subject matter (educational-animals, educational-science) on the Optimum program directory for Saturday morning educational program descriptions listed for major broadcast television networks (CBS, NBC, ABC, Fox) programs aired in the Long Island, New York area, between 7:00 am and 12:00 pm, within one month of programming?

RQ2

What proportion of Tier I, Tier II, and Tier III academic vocabulary words are found in Saturday morning educational program descriptions listed for major broadcast television networks (CBS, NBC, ABC, Fox) programs aired in the Long Island, New York area, between 7:00 am and 12:00 pm, within one month of programming?

Major study research questions

RQ1

What proportion of Tier I, Tier II, and Tier III academic vocabulary words are found in Saturday morning educational television programs aired on major broadcast television

networks (CBS, NBC, ABC, Fox) in the Long Island, New York area between 7:00 am and 12:00 pm?

RQ2

Which Broadcast Television Network (CBS, NBC, ABC, Fox) offers the most evidence of Tier II academic vocabulary found in educational programming aired in the Long Island, New York area on Saturday mornings between 7:00 am and 12:00 pm?

Definition of Terms

For the purpose of this study, the following operational definitions were used:

Academic vocabulary:

Vocabulary which can be used in academic contexts. (Smith, 2020). These types of words are most commonly found in texts and occur less frequently in oral conversation. Examples of these particular vocabulary words include words that are categorized into three specific tiers; Tier I words, Tier II words, and Tier III words. Each tier is defined and examples are provided within this set of terms defined.

Tier I Words:

Tier I words are defined as words that are used by children across most dialects, cultures, and geographic regions of the United States. Beck et al. (2013) referred to these words as basic words, such as “dog, sad, look”. Children are familiar with Tier I words because they frequently occur in oral conversations and do not require instruction or explanation of word meaning. Children acquire these words incidentally through everyday experiences and naturally utilize them within their own vocabulary.

Tier II Words:

Tier II words require instruction for children to understand their meaning. Beck et al. (2013) defined Tier II words as words that are of high usage in language and are located

across domains. When compared to texts, these words may not be as frequently used in conversation, however students may need to learn the meaning of these words. Beck et al. (2013) suggested that Tier II words are the most important type of word children need to learn because these words play an essential part of a person's repertoire of words and have a significant influence on verbal functioning. They also recommend that these are the words teachers should be instructing in their teaching of vocabulary to students. Beck et al. (2013) suggested a set of criteria that compromised Tier II words in the areas of importance and utility, conceptual understanding, and instructional potential. Importance and utility include words that are found within written texts and appear regularly across an array of domains. Children typically have a general conceptual understanding of what a Tier II word means, but may not know the specific, sophisticated Tier II word to use when explaining the concept. Lastly, instructional potential of words refers to multi-meaning words or additional ways the word can be used in more than one context. Examples of Tier II words include: aid, hinder, pattern, venturing, display, constant.

Tier III Words:

Tier III words are only used for a particular subject or activity and are needed for a specific content area. Tier III words may also be specific to a particular dialect, culture, or geographic region. According to Beck et al. (2013), Tier III words occur less frequently and are limited to specific subjects and domains, such as science and social studies. These words need only to be taught in particular contexts when learning specialized subject matter. Examples of these words include: predators, civilization, sulfur dioxide.

Broadcast:

To send out or transmit (something, such as a program) by way of radio or television or by streaming over the Internet ("Definition of BROADCAST", 2020)

Broadcast Television:

Television programming sent out over the air to all receivers. ("Broadcast television dictionary definition | broadcast television defined", 2020).

The pioneering television broadcast networks that emerged in the early 1950's were the Columbia Broadcasting System (CBS), the American Broadcasting Company (ABC), the National Broadcasting Company (NBC), and later to follow in the 1970's, FOX Broadcasting, named for the Twentieth Century Fox Film Studio (Edgerton & Rollins, 2001).

Educational Television Program Descriptions:

Textual descriptions found within the Optimum TV Channel Guide that provides a short summary of the program.

Program descriptions include a picture of the host and show title, the episode name and number, the season, the broadcast channel, the date, time, and length of the show, the genre of the show, and the opportunity to record the show. A textual summary is also included. An example of this comes from the on-line Optimum TV Channel Guide from the episode Laugh-ternoon Fun, Season 2, Episode 10, oh baby!, ABC, Saturday, 11:30am : *"Exploring what makes afternoons special for newborn animals in the wild.*" (*Optimum TV Channel Guide*. Optimum. (n.d.). Retrieved December 29, 2022, from https://www.optimum.net/tv/guide)

Educational Television Programs:

Television that provides instruction, particularly for students ("Definition of EDUCATIONAL TELEVISION", 2020)

These programs may be labeled as “EI”, for educational/informational, or may be paired with other types of genre categories, such as

educational, animals/educational/nature, animals/educational, educational/science and children/educational/science.

Infotainment:

Entertainment with information (Tsurinaa & Kuryliakb, 2022)

“The convergence of information and entertainment” (Allan & Thussu, 2010, p. 360)

These television programs provide the viewer with informative content expressed through an entertainment lens to make the educational material more approachable and engaging to the intended audience.

CHAPTER 2 REVIEW OF LITERATURE

This chapter reviews literature on several themes within the theoretical framework and related issues of this study. These themes include: L-SES children and vocabulary knowledge, television watching and L-SES children, learning from television, infotainment and educational television, educational television and vocabulary development, co-viewing and vocabulary growth, educational television programs and broadcast television networks.

L-SES Children and Vocabulary Knowledge

Children from lower-socioeconomic homes are the leading number of school children within the United States public school system (Hair et al., 2015). Children living within low socioeconomic status households are at greater risk for reading difficulties when compared to affluent peers, and in particular, suffer from deficits in vocabulary knowledge which are often apparent by age three and typically do not improve over time (Linebarger, et al., 2013). The National Reading Panel's 2000 report indicated a distinctive gap in vocabulary skills exists between children living in L-SES homes when compared to their middle to upper SES peers (Justice et al., 2005).

The importance of vocabulary growth, or lack thereof, among children from L-SES has been studied for over two decades. Results have all concluded that, according to the type of socioeconomic status household where children reside, a genuine vocabulary disparity exists. This vocabulary gap between children living in low and middle-high economic status homes, begins in the home environment and is evident at an early age, much earlier than when children are introduced to formal education.

In their acclaimed study regarding children's language and vocabulary development, Hart and Risely (2003) observed 42 families for 2 ½ years in their homes with 1 and 2 year old children who were learning how to talk. Their data indicated that differences existed between the amount of experiences with language and interaction parents provide to their children, which in turn was linked to children's later language skills by age 3. By age 3, gaps in children's amount of speech, vocabulary development and ways of interaction were evident amongst children who lived in L-SES households and between their peers who lived in higher socioeconomic homes. Hart and Risley (2003) estimated that these children suffered from a significant gap of approximately 30 million words. In their 10 year follow up study, they found this vocabulary deficit negatively impacted these children's verbal ability, receptive and expressive vocabulary, and academic achievement in third grade (Brush et al., 2021).

To branch out from Hart and Risley's research of how socioeconomics impacts children's language development, an investigation focusing on the developing language skills of young children was conducted by Brush, Lynch, Reilly, Melhuish, Mittinity, and Brinkman (2021). Their study was performed over a five year period, and sought to determine the differences in language development amongst children whose mothers either had a secondary education degree (high educated group) or did not (low educated group).

In total 741 participants, (244 from low educated households and 497 from high educated households) were studied every six months, where children's ages ranged from 6 to 18 months. After studying adult word counts by maternal education, child vocalization counts by maternal education, and conversational turn counts by maternal

education, Brush et al. 's (2021) results added to the findings that maintain the reality that a socioeconomic word gap exists. However, their results identified a specific time frame of when this gap develops, which was found to be between 12 and 18 months of age amongst children living in L-SES homes. Their findings also revealed that mothers with secondary education talked more to their children than mothers with less education, specifically when children were between 6 and 18 months of age.

Additional findings from other studies investigating the language development of children living in L-SES homes further concludes there are negative implications for these children in terms of their vocabulary development and retention. According to Lawrence, Capotosto, Branum-Martin, White, and Snow (2012), children from low-income families do not improve vocabulary during the summer months when compared to wealthier peers, and many of these students regress in their word knowledge when school is not in session. Furthermore, many children from L-SES households develop vocabulary skills at slower rates when compared to children living in higher socioeconomic homes (Noel et al., 2008).

Hair, Hanson, Wolfe, Pollack (2015) found that children living in families with limited financial resources grew parts of their brain that were less developed than children living in moderate to high-socioeconomic households. They studied 433 children, ages 4 to 18, from 6 centers around the United States that included participants from mixed variations of income, race, and ethnicity. Follow ups with participants occurred at the two-year mark. Their findings discovered that these students living at or below the poverty level were behind cognitively, had lower IQ scores, and demonstrated

lower scores on standardized academic achievement tests than peers living above poverty levels.

According to the American Psychological Association (2017), children living in homes with lower incomes demonstrate gaps in literacy growth prior to entering formal schooling and are exposed to lesser amounts of experiences that promote foundational literacy skills, such as vocabulary development. These children often have limited access to reading materials in their households and are typically five years behind peers living in higher-socioeconomic homes in terms of their literacy development.

These studies provide evidence that children from L-SES homes are at a greater disadvantage to suffer from language and vocabulary deficits than children from higher socioeconomic houses, and this may lead to deficits in other areas of language and literacy development. It has been established by numerous researchers, that a child's vocabulary significantly influences his or her comprehension and literacy development (Guo, Wang, Hall, Breit-Smith, & Busch, 2016; Hirsch, 2003; Kucan & Sullivan-Palincsar, 2011; Lane & Allen, 2010; Silverman & Crandel, 2010). Therefore, L-SES children who demonstrate low-level vocabulary skills may be handicapped in their overall literacy growth when compared to peers in higher-socioeconomic status households.

Television Watching and L-SES Children

Television is a viable, ubiquitous media for L-SES children. Many studies over the past several decades have examined the viewing habits and viewing frequencies of children living in lower income households. These investigations have contributed to the

ever growing evidence that L-SES children have access to and watch significant amounts of television.

The American Academy of Pediatrics (AAP) recommends that children aged two and older should have limited screen time of no more than two hours of television viewing per day. In addition, the AAP does not encourage or endorse children being provided a television within their bedroom. The AAP advises that children's contact with television and screen time hours be limited in terms of their accessibility to encounter a screen and the duration of time spent viewing it.

Contrary to the AAP's counsel, a study performed by Fletcher, Whitaker, Marino, and Anderson (2014) examining 2,221 low-income preschool children's screen viewing at home discovered that more than half of the children who participated watched more than double the AAP's recommended amount of time. Their findings additionally indicated that these children also had a television in their bedroom, allowing them the freedom to easily access television. It is not necessarily known if the parents of these children were aware of the AAP's advice or if they simply did not abide by it, but despite the AAP's suggestion, L-SES children are exposed to higher amounts of encounters with television than what medical professionals deem appropriate.

Fletcher et al.'s (2014) investigation was not the only study to discover the substantial amounts of television consumed by children living in less affluent households. In a longitudinal study that was conducted between April 2004 and January 2015, Yang-Huang, Grieken, Moll, Jaddoe, Wijtzes, and Raat (2017) sought to measure the association between family socioeconomic status and children's television viewing. Parents of 3,561 children living in all types of socioeconomic households completed

questionnaires regarding the amount of time their children spent watching television. Participating children were assessed at ages 2, 3, 4, 6, and, lastly, age 9. Findings indicated that children living in low income homes increasingly watched television more frequently as they got older. Furthermore, television continued to be the most popular form of screen viewing when compared to video games and cell phone use. A study conducted by Heintz and Wartella (2012) calculated that 98% of American children had television in their homes, with 42% having television sets in their bedrooms, allowing them numerous opportunities to watch television in their primary residence.

To add to these findings, as stated by Larson and Rhan (2015), the 2010-2011 Nielsen television audience report approximated that children from ages 2-11 spend over three hours per day viewing television. This is particularly distinct for children from L-SES households. In 2020, The Nielsen Company's study found that with children being confined to their houses due to the COVID-19 lockdown across the country, television intake significantly grew during this time, particularly during daytime hours for children ages 6-11 and teens 12-17, who provided the biggest gain to broadcast television than any other platform.

For school-aged students, their viewing habits increased dramatically when compared to all other age groups during the COVID-19 pandemic. While markets across the country all saw substantial increases in television watching, the majority of these higher levels of television viewing were amongst children living in major cities in the northeast, such as Washington, D.C., Boston, Baltimore, Philadelphia and most drastically, New York.

In a study comprised of 121 children, ages 4 to 8 years old, from urban elementary schools and child care centers found within the Pacific Northwest and the Northeast United States, Linebarger, Moses, Garrity Liebeskind, and McMenamin (2013) found that L-SES children were 1.5 times more likely to have a television in their bedroom and spent approximately seven hours per week longer watching television when compared to children from middle class families. In addition, L-SES children indicated positive attitudes towards television, spent more time watching TV than reading books, and their homes contained multiple televisions and fewer print-based materials. Lastly, they found that after viewing children's educational television programming, that was accompanied by on screen print, L-SES children made gains in their vocabulary growth.

As stated by Wright et al. (2011), for less advantaged children who have different learning opportunities in their homes and neighborhoods when compared to their more affluent peers, television has the potential to positively influence their language ability. As television can act as an educational tool for L-SES children's vocabulary development, the importance of researching academic vocabulary and educational television cannot be overstated.

Learning from Television

Researchers have been exploring the effectiveness of television and learning as early as the 1950s (King, 2000). In 2000, Kenneth King examined the historical overview of instructional television in science education. His examination uncovered particular research conducted at Fordham University for the United States Army and Navy, which explored the effectiveness of television-based instruction and reservists' training. Their findings indicated statistically significant gains on test scores for reservists who were

trained and instructed in large groups by viewing television. Additionally, these gains were long-lasting.

King's study (2000), also highlighted the empirical evidence, garnered from additional studies, which indicated the efficacy of television as a successful teaching tool in science instruction. In 1980, Klopfer stated, "…televised science programs offer a means for expanding scientific literacy of the entire citizenry, not only students in school." (King, 2000, p.230) In 2019, Dang studied discipline-related television programs as means for incidental learning of specialized vocabulary used in medical lectures and seminars. His study revealed that discipline-related television shows can lend themselves to incidental learning of specialized vocabulary. As television offers opportunities for learning outside of school environments, it can act as a supplemental teaching tool and be utilized to promote vocabulary acquisition.

The model used to develop educational programs has been seen by scholars as unique in development and entertainment production. This model utilized formative questions, such as *"Will a program be appealing and beneficial to a particular audience?"* (Fisch, 2002, p. 3) The unique results culled from formative studies can provide an indication of potential success for achieving television production goals. Fisch (2002, p. 3) explains that the goal of summative research is to *"assess the impact of the series on its viewers."* Rather than explicitly explore the television product, summative research provides data on viewer influence and how it relates to educational or instructional content (Fisch, 2002).

The success of groundbreaking educational television shows, including Sesame Street and The Electric Company, utilized formative and summative approaches in the

development of a production model known as the CTW model, named after the Children's Television Workshop Model (Fisch, 2002). The term has been used by scholars and adapted to be called The Sesame Workshop Model- a process used to produce educational media. Revelle (2003), highlights the model's use across other children's educational programs including 3,2,1, Contact and Dragon Tails. The Sesame Workshop Model is collaborative and requires educators to focus on curriculum goals and objectives while channeling producers to focus on production formats that address the same goals (Revelle, 2003).

According to Fisch, Kirkorian, and Anderson in 2005 (Mestre, 2009), *"American children have spent substantially more time watching television than they have spent in school." (p. 371)* With this in mind, it is imperative that researchers continue to further investigate the potential of television as a supplemental educational vehicle to learning. This is particularly relevant when one realizes that T.V. is viewed by children at ages, from infants to toddlers, much earlier than when they are required to attend formal schooling during the pre-school or school-aged years of where intentional learning often begins, as stated by Fisch et al. in 2005 (Mestre, 2009). Godwin-Jones (2018) posits that it is advantageous for parents and teachers to utilize TV programs to assist with language learning because they are short in length and can be viewed multiple times. Sorenson, Duncan, and Paradis (2019) concur that an association exists between the increased language development amongst children who view educational television programs.

The effects of television on children's development has been studied for decades (Powell & Roberts, 2014) and has often been criticized for the potential influence it has on children's cognitive development and academic achievement. Early analysts initially

believed that children were cognitively passive participants when viewing television who could not process nor learn from television content. Conversely, these common beliefs were challenged in the 1980s when social science researchers began to study the effects of television watching and children's development (Kirkorian et al., 2008).

In 2008, Kirkorian, Wartella, and Anderson analyzed several studies exploring the effects of television on children's development and the impact television has on children's academic achievement. They identified studies which found that children as young as two actively engage cognition and can learn vocabulary when viewing television. Their analysis of research studying the effects of television and children's cognitive development revealed that children can learn the intended lessons from educational programs. In addition, they referenced studies which found television viewing was positively associated with academic achievement among children who watched educational programming in moderation.

In 2004, Fisch (Mestre, 2009) utilized his capacity model approach to propose that comprehension from watching educational television can happen even when there is an absence of transfer since transfer requires more than simply comprehending the content of the educational program itself. Other influencing factors that contribute to comprehension include how closely related the educational content is to the narrative, therefore tying together how the viewer's working memory is affected by viewer and program characteristics that include prior knowledge, clarity of the presentation, visually concrete content, and interest in subject-matter, to name only a few.

Using this theoretical approach, Piotrowski (2014) studied the effects of participatory cues and working memory of children who viewed familiar educational

television. According to Piotrowski (2014), participatory cues embedded within the content of educational television require the viewer to participate, respond, or gesture in a motoric or linguistic manner, where as program familiarity assists viewers comprehension because they have characteristics that are familiar to viewers, such as story schema and complexity. This lightens the cognitive load, for intended viewers within the targeted age group audience, as they watch the program. 187 American pre-school children were randomly assigned to watch one of two episodes of Dora the Explorer, where one episode contained participatory cues and the other did not. Piotrowski's findings indicated that the combination of participatory cues and program familiarity led to the highest levels of educational content comprehension amongst these students, again providing further evidence that children can learn from television.

Infotainment and Educational Television

A popular trend in media and television called infotainment, where information is presented through an entertaining manner to viewers, has its roots in news media. The origin of the word dates back to the late 1980's , when the word was initially used to describe a manner of presenting informational news to viewers in an entertaining fashion (Allan & Thussu, 2010). However, over time, infotainment has branched out considerably beyond news media to include genres such as educational television.

In 2022, Tsurinaa and Kuryliakb examined children's infotainment television programs, such as Sesame Street and Doc McStuffins. They concluded that infotainment children's television programs can be a positive tool for learning if parents or teachers discuss the content of the show with children. They claim that children's infotainment is useful, easily accessed, and uses illustrative animations, which allow children to

understand the problems of the characters portrayed throughout the program. Children can connect to these characters, find similarities between themselves and the protagonist, and potentially learn to evaluate their own behavior.

Combining infotainment with educational television has the potential to impact other areas of development, such as language skills, for viewers. According to Cahill and Bigheart (2015), educational television provides young viewers with numerous opportunities to learn word knowledge. Many educational television programs for children incorporate foundational understandings of social studies and science concepts that add to a child's repertoire of vocabulary as well as background knowledge of subject matter. The researchers state, "*Educational television promotes children's vocabulary development through incorporation of less-frequently heard and complex words. Additionally, television programs commonly pair those target words with actions or images and contextual definitions*." (Cahill & Bigheart, 2015, p. 53). The way educational television incorporates an infotainment approach to vocabulary exposure and instruction, may assist young viewers with vocabulary acquisition as well as word meaning.

Educational Television and Vocabulary Development

Incidental exposure to new words occurs through conversations with others and by listening to words spoken in one's environment (Justice et al., 2005). Television delivers orally presented dialogue to viewers and offers children numerous opportunities for incidental word exposure. After the age of two, children have the capability to learn from television, and researchers have found statistically significant positive results from children viewing televised programs (Larson & Rhan, 2015).

Results from a study conducted by Rice, Huston, Truglio, and Wright (1990) investigating preschoolers' ability to learn vocabulary from broadcast educational television shows indicated that watching educational programming contributed to young children's vocabulary development. They sought to discover if preschool children were capable of learning new words when watching broadcast educational programs in their home environments. 326 preschool children viewed episodes of "Sesame Street" and were administered the Peabody Picture Vocabulary Test at the beginning and end of the two year study. Findings revealed that the medium of television is a viable vehicle to introduce new word meanings to young children because it captivates children's attention with visual and verbal repetitions of novel words. Their study disputed previously held notions by language development specialists that young children could not acquire vocabulary or other aspects of literacy from television. Rice et al. (1990) argued that as children cognitively process this medium, they engage in linguistic processes which allows for language-learning.

Peters and Webb's (2018) experimental study found that second language learners who viewed television could incidentally learn vocabulary at the level of meaning recall and meaning recognition. They investigated sixty-three Flemish English as a Foreign Language junior and sophomore business students and tested their ability to learn new words incidentally from watching a single, full-length TV program. Additionally, they wanted to determine if a relationship between word learning and the frequency of word occurrence existed. Peters and Webb's findings substantiated the claim that incidental vocabulary growth through watching television does occur. A positive relationship between the frequency of occurrence and vocabulary acquisition was also discovered,

emphasizing that the more frequently a word occurs throughout a television program, the more likely it is to be noticed and recalled by the viewer.

In addition to television, researchers have studied other forms of media as a source for gaining vocabulary. Ashcroft, Garner, and Hadingham (2018) conducted an experiment with 187 Japanese students to determine if viewing a full-length movie in English with captions could directly affect second language learners' vocabulary acquisition of the foreign language. They worked on the premise that captions could provide a visual representation of the dialogue and potentially aid second language learners in their comprehension of the language being spoken throughout the movie.

Using a repeated measures design with a pre- and post-test along with a control group, where the dependent variable was vocabulary gain, the researchers supposed that students would correctly recall words from a list of 42 target words taken from the script of the movie being viewed in the second language. Their analysis discovered a significant mean gain of 1.77 (4.2%) words per student, confirming their hypothesis that watching movies with captions included could result in moderate amounts of incidental vocabulary growth. According to Aldukhayel (2022), incidental vocabulary happens when one reads or listens to a meaningful input without attending to vocabulary itself. He states, "Learning vocabulary from context means that learning occurs during activities such as reading or listening to a language input while students' concentration is on the content of the input be it brief or extended." (2022, p. 590)

Ashcroft's et al. (2018) findings indicate that the audio-visual input, provided when captions were incorporated alongside the movie images, can serve as a

supplemental means for vocabulary acquisition among language learners. Peters (2020) found that audiovisual input can function as a compensatory technique for low-proficiency learners, as captions decompose speech into words, allowing the viewer to utilize both listening and reading comprehension skills simultaneously.

Wang's (2019) research with Chinese second language learners and the effects of captioned television programs and vocabulary acquisition discovered similar findings. Wang studied eighty students who viewed segments of English-presented television programs with captions. Immediately following their viewing of each segment, participants were tested for vocabulary acquisition and comprehension. Wang's results indicated that captions can assist vocabulary and comprehension learning.

To follow up Wang's research, Aldukhayel (2022) conducted a study which investigated three types of input, audiovisual input, audio input, and written input, to determine which mode of input was most effective for L2 vocabulary learning. In his quasi-experimental study, 95 Arabic-speaking male students, learning English as a foreign language (EFL), were randomly assigned to one of four groups; the Viewing Group, the Listening Group, the Reading Group, or the Control Group. Participants were initially evaluated prior to the start of the experiment using the updated Vocabulary Levels Test to assess prior vocabulary knowledge. Results indicated that significant vocabulary learning happened through different modes of input. Vocabulary gains were higher in viewing and reading modes than listening modes, supporting that second language learners can increase incidental vocabulary through viewing television.

Incidentally learning words from television has been a topic of many researchers, however in another recent publication, Peters (2020) examined studies that investigated acquiring vocabulary incidentally from viewing captioned television. His analysis revealed that EFL students of all ages, from preschool through university level, have acquired incidental vocabulary from captioned television. Therefore, one could reason that if second language learners of all ages can obtain vocabulary growth incidentally when visuals are paired with audio, then the possibilities exist that students who suffer from vocabulary deficits may also benefit from captions while viewing educational television as a means to potentially increase incidental vocabulary.

Television programs that are aimed at young children's viewers have been found to be an effective tool in promoting increased language skills in students. Kokla (2021) reports that findings from recent studies have concluded young children are capable of learning new words after only one exposure to the word, and can acquire vocabulary incidentally when they are subjected to authentic language. Kokla also reasons that because children's television programs implement pictures, music, and movement with each episode, they can be utilized as a teaching tool for vocabulary to young learners.

In 2021, Kokla examined how the preschool animated show *Peppa Pig* affected the language acquisition skills of English as a Foreign Language preschool children in Greece. 55 participants were broken up into 2 groups for this experiment, with the control groups solely viewing the televised program and the intervention groups receiving instruction alongside viewing the same episode. Her findings reveal that both groups successfully acquired receptive formulaic language, however when television programs

were reinforced with explicit instruction after viewing episodes, children made significant gains.

Co-Viewing and Vocabulary Growth

Recently, several researchers have investigated the implications of co-viewing television between adults, typically parents, and children to discover how children's vocabulary learning may be impacted when educational media is supported by adult intervention. These studies provide further evidence to support that vocabulary can be gained through viewing television.

In their 2019 study, Neuman, Flynn, Wong, and Kaefer analyzed children's educational media to examine the effects of co-viewing on low-income children's attention to and understanding of novel words found within the content of the program. 83 preschool participants watched two educational media stories, one with an adult and one without an adult co-viewer. Results revealed that children from low-income households can pick up at least partial word knowledge as a result of viewing educational media when supported by an adult to help assist in the comprehension of the program, to maintain attention, to elaborate on the content, and to answer any questions posed by the young viewer. Secondly, they discovered that these children improved their expressive word learning when words were repeated throughout the program, regardless if the program was watched with an adult.

In 2020, Neuman, Flynn, Wong, and Kaefer conducted another study of low-income preschoolers word learning after viewing educational television episodes in participatory, expository, and narrative contexts. 102 low-income preschoolers, from Head Start Centers, were randomly selected to participate in this study to examine the

effects of context on word learning. Using a within-subject design, all children were exposed to each condition, and viewed educational episodes of *Martha Speaks, Word on the Street (*a vocabulary segment from *Sesame Street),* and *Bubble Guppies*. The study was conducted at each Center in three separate rounds. Pre and post-assessment were administered in the areas of word identification, word meaning, and words in new context.

Results indicated that word learning of targeted words happened most frequently when children watched episodes that contained the participatory condition, where children were invited to pause and ask questions, and where viewer participation was sought after. However, episodes that contained the expository context also supported word learning because viewers were supported by concrete examples and declarative information about each word. Episodes that focused on the narrative context of story telling challenged students with the most complex context for word growth. Neuman et. al's (2020) study also discovered that for students with lower receptive language skills, adult mediation and co-viewing interactions while watching these types of educational programs would best support these children with learning vocabulary.

Williams and Thomas (2017) studied 57 children ages 4 and 5 years old to determine the effectiveness of co-viewing children's educational television on second language learners' vocabulary growth when compared to traditional storytelling. They found young children made greater gains in their vocabulary development after co-viewing a television program with an adult when compared to children who had listened to stories read aloud.

Educational Television Programs and Broadcast Television Networks

In 2015, Larson and Rhan conducted a study of the Public Broadcasting Service (PBS) television show *Sesame Street*. Using Neuendorf's 2002 content analysis approach, Larson and Rahn determined how target words were used with "Word on the Street" content and compared each occurrence to research-based recommendations for quality vocabulary instruction. A recommendation from their study suggested future content analyses to include a formal rating system to determine the appropriateness of target word definitions and examples, as well as employing additional independent coders for all analyses. A conclusion reached from their investigation advocated for future researchers to examine word learning through other educational television programs to establish the types of words being taught and the instructional strategies that are most effective in providing a productive word learning environment. However, evidence of research studying Tier I, Tier II, and Tier III vocabulary words included in major broadcast television networks' (CBS, NBC, ABC, Fox) educational television programs is non-existent.

Neuman, Wong, Flynn, and Kaefer (2019) performed similar research that focused on vocabulary and children's educational programs. They conducted a content analysis of children's educational programs that sought to discover the instances of vocabulary instruction as well as how these particular words were being instructed to young children. Findings indicate that 66% of shows sampled included some form of vocabulary instruction. The types of words chosen to include for vocabulary instruction were mixed and varied in complexity but, for the most part, were nouns accompanied by pictures. They concluded that there was no specific rationale for word choice amongst

these programs, and suggested that media developers contemplate sourcing vocabulary words in a more systematic approach that can be utilized to instruct young children. Additionally, attentional cues presented with visuals and sound effects to draw the viewer's attention to the word itself occurred more frequently throughout programs than the instances of ostensive cues, which provided direct, explicit verbal definitions.

Relationship between Prior Research and Present Study

We can gather from the literature reviewed that television offers opportunities for children to acquire vocabulary, particularly children living in L-SES households as they spend significant amounts of time watching television. As many of these children display vocabulary deficits, and as children can enhance their vocabulary growth from viewing televised programming, it is necessary to study programs these children have access to in order to discover the types and frequencies of words viewers are exposed to.

For over a decade, Common Sense Media, a research group, has been researching children's relationships and interactions with television. According to the Common Sense Media Research Study in 2011 (Rideout), among children living in L-SES homes, 26% "often" watch educational TV shows, compared to 5% who often use educational computer games or software and 2% who often use educational games or apps on a cell phone, iPod, iPad, or similar device. The majority (98%) of lower-income children have a TV, but far fewer (just 53%) have access to cable or satellite programming. Furthermore, Educational TV is the one type of educational content that lower-income children are more likely to consume than higher-income children (26% often watch vs. 17% among higher-income families).

The 2017 Common Sense Media report discovered that lower-income families were less likely to have cable subscriptions (61 percent compared to 70 percent among higher-income families) in their homes, with only 32% having DVR service. These findings continued to indicate that lower-income children were more likely to rely on broadcast television while viewing these shows as they are aired during their intended time slot. In addition, lower-income children's television consumption continued to increase, with these children watching more TV in 2017 than they did in years past (58 percent vs. 42 percent), (Rideout, 2017).

In their most recent media report from 2020, Rideout and Robb found that just prior to the pandemic, more than a third of children in L-SES families lacked a computer in the home, with more than a quarter of them lacking internet access. On average, these children spend approximately two hours a day interacting with screen media than their peers living in higher income homes, and their parents are more likely to see positive effects of screen media than parents of children in higher-income homes. Rideout and Robb's research also discovered that watching television and videos was the main reason children living in L-SES homes used screen devices, accounting for nearly three-quarters (73%) of all screen time. Since children living in L-SES homes may not be afforded the luxury of viewing paid television programming and streaming services, they are left to watch free televised programs found on major broadcast networks.

As these networks are required by law to air a minimum of three hours of educational programming (Jordan, 2004), many of these children may be viewing educational programs aired on these networks during Saturdays when they are home from school. Beck et al. (2013) professed Tier II academic vocabulary words to be the most

critical types of words students need to learn, thus the type and frequency of academic vocabulary content contained in broadcast network television's educational programs is essential to investigate since tiered vocabulary words are commonly used in academic discourse and texts that children engage with when they are in school. Additionally, Tier II words appear frequently in written language and are necessary for comprehension (Beck et al., 2013).

As vocabulary is essential to literacy development and impacts comprehension abilities (Guo, Wang, Hall, Breit-Smith, & Busch, 2016; Hirsch, 2003; Kucan & Sullivan-Palincsar, 2011; Lane & Allen, 2010; Silverman & Crandel, 2010), it is necessary to examine all possible avenues where children can be exposed to opportunities to learn vocabulary. Therefore this study sought to discover which major broadcast television network offers viewers the greatest amount of exposure to Tier II words during educational programming aired on Saturday mornings.

CHAPTER 3 METHODOLOGY

This study began with an exploratory pilot study to analyze television program text descriptions prior to the major study, which analyzed television program 30-second clips.

Pilot Study: A Metadata Survey of Tiered Academic Vocabulary in Educational Television Program Descriptions on Optimum Program Directory

Using a survey method to count and code a data set of television programming, descriptions drawn from the four channels from the Optimum on-line websites television listing directory page (www.optimum.net/tv/guide) were analyzed. The directory provides show descriptions that are used to preview show content before viewing. A pilot study was executed to observe the distribution of tiered academic vocabulary words on network channels in the Long Island, New York area. This pilot study sought to examine and quantify tiered vocabulary contained within program descriptions. Program descriptions provide a short summary of the television program's content. They inform the viewer of what the show is about prior to the viewer watching the program.

Samples of TV show descriptions were collected and analyzed for the pilot study, where the population of one month of Saturday morning broadcast educational television program descriptions between 7:00 am and 12:00 pm constituted the sample frame. Data from this pilot study, which informed research question 1, led to the hypothesis for the main study, which explored academic vocabulary in Saturday morning educational television programs. This data was used to formulate a hypothesis that sought to discover frequency distributions of tiered academic vocabulary between networks.

The limitation of this pilot study included instances where specific show genres were listed as educational but program descriptions were absent in some records. This eliminated the use of the metadata for determining if tiered vocabulary words were evident.

Pilot Study Research Questions

RQ1 What proportion of television programs are labeled with the genre of educational, educational/informational, or educational plus subject matter (educational-animals, educational-science) in Saturday morning educational program descriptions, listed for major broadcast television network (CBS, NBC, ABC, Fox) programs aired in the Long Island, New York area between 7:00 am and 12:00 pm?

RQ2 What proportion of Tier I, Tier II, and Tier III academic vocabulary words are found in Saturday morning educational program descriptions listed for major broadcast television network (CBS, NBC, ABC, Fox) programs aired in the Long Island, New York area between 7:00 am and 12:00 pm?

Pilot Study Sampling Procedures

Step 1. Identifying the data set

Sample program descriptions and television programs in text form were recorded and analyzed from the t.v. listing directory page (www.optimum.net/tv/guide). 94 towns use the programming and channel schedule examined in this study. The towns included: Amityville, Ashroken, Atlantic Beach, Babylon, Baldwin, Bayville, Bellrose Terrace, Bethpage, Brookville, Carle Place, Centerport, Cold Spring Harbor, Copiague, Deer Park, Dix Hills, East Hills, East Meadow, East Northport, East Norwich, East Rockaway, East Williston, Elmont, Farmingdale, Floral Park, Franklin Square, Freeport, Garden City,

Glen Cove, Glen Head, Glenwood Landing, Greenlawn, Greenvale, Hempstead, Hewlett, Hicksville, Huntington, Huntington Station, Inwood, Island Park, Jericho, Lattingtown, Levittown, Lindenhurst, Locust Valley, Long Beach, Manorhaven, Massapequa, Massapequa Park, Matinecock, Melville, Merrick, Mill Neck, Mineola, North Babylon, North Bellmore, North Woodmere, Northport, Oceanside, Old Bethpage, Old Westbury, Oyster Bay, Plainview, Plandome, Point Lookout, Roosevelt, Sands Point, Sea Cliff, Seaford, Searingtown, Stewart Manor, Syosset, Uniondale, Valley Stream, Wantagh, West Babylon, West Hempstead, Westbury, Wheatley Heights, Williston Park, Woodbury, Woodmere, Wyandanch, and portions of Alberston, Cedarhurst, Commack, Great Neck, Lawrence, Lynbrook, Malvern, Manhasset, New Hyde Park, Port Washington, Roslyn, and Roslyn Heights.

Step 2. Building the sample frame

The program listing population for Saturday programming from 7 am to 12 pm across 4 channels (ABC, CBS, NBC, and FOX) comprised 288,000 seconds of show content across 60 and 30 minute time slots. Shows that were not categorized as educational were not considered in the sample.

The total sample had 25 educational television program descriptions represented across 4 channels (1-ABC, 2-CBS, 3-NBC, 4-FOX) for four Saturdays between the hours of 7:00am and 12:00pm. The total amount of programming descriptions in minutes examined was 750.

Pilot Study Methods

1. Extracting metadata

Specifically, metadata was extracted including instances and specific word counts of tiered vocabulary words from text based show descriptions of educational programs listed in the Optimum television guide online (www.optimum.net/tv/guide), Saturdays by broadcast television networks (CBS, NBC, ABC, Fox) within the Long Island, New York area between the hours of 7:00 am-12:00 pm found on www.Optimum.net/tv/guide. Each description was copied and pasted into a Google spreadsheet and categorized by time of day, network, and educational genre (educational, education/children/science, educational/animal/nature, educational/animal, educational/science) .

2. Coding vocabulary word instances

To find and code specific words to their respective tiers, a search of tiered vocabulary was performed using a modified instrument based upon Beck et al.s (2002) tiered system definitions model, which was employed by Larson and Rhan (2015) in their study. Each instance was counted and words were coded as Tier I, II, or III. Articles of speech (the, and, a…) and people's names (host, presenters, people interviewed) were not included in the coding or analysis.

3. Creating a hypothesis based upon the pilot study data

After coding the words and identifying them as either T1, T2, or T3, data was inputted into a Google spreadsheet. Next, descriptive statistical analysis was employed to report the mean, and finally hypotheses were cast based on pilot data for tiered vocabulary words.

Pilot Study Data Collection

Genres

Step 1:

All educational genre shows on the 4 broadcast networks were identified by looking in the Optimum Program Directory of upcoming shows for the week using Optimium.com. Educational genres included:

educational (Earth Odyssey with Dylan Dreyer-NBC)

animals/educational/nature (Wildlife Nation with Jeff Corwin- ABC)

animals/educational (oh baby! - ABC)

children/educational/science (The Henry Ford's Innovation Nation- CBS),

educational/science (Xploration Awesome Planet- FOX5, Xploration Outer Space- FOX5, and Life 2.0- FOX5).

Step 2:

Next, program description screenshots of all shows for one month of programming were cut and pasted into a word document.

Step 3:

A DVR was programmed to record aired programs for a one month of Saturdays on the chosen 4 networks.

Step 4:

Program description screenshots, with text to code, were printed out as a hard copy for coding purposes.

Step 5:

Program description screenshots with text were also used to document how data were collected for the Major Study, including the data collection sample number, random number order selection for 30 second clip, and to document when video had been transcribed into a google document for coding purposes.

Program Descriptions

Step 1:
Each tier was assigned a color.
T1= yellow
T2= orange
T3= green

Step 2:
Articles of speech and names of people mentioned, such as television hosts or presenters (examples: a, the, Dylan Dreyer) were eliminated and not included in the coding process.

Step 3:
Using the coding instrument of tiered vocabulary definitions, words were coded as either Tier I, Tier II, or Tier III.

Step 4:
During analysis, two additional codes were discovered. “Unsure words” were placed into a separate category if the coder was initially unsure of which tier the word belonged. Two possible tiers were next identified. After careful analysis, the word was coded to the appropriate tier which most accurately met the vocabulary definition criteria.

A “multiple meanings” category emerged based upon a word that had multiple meanings. After careful analysis, the word was placed into the appropriate tiered category according to how the word was used in the context of the sentence and program description.

Step 5:

All Tier 1 words within each program description were coded using a yellow highlighter. All Tier 2 words within each program description were coded using an orange highlighter. Lastly, all Tier 3 words within each program description were coded using a green highlighter.

Step 6:

All T1, T2, T3 words per program were counted and documented.

Step 7:

Next, the total number of T1, T2, T3 words per network were computed and documented.

Step 8:

Results were entered into a Google spreadsheet and descriptive statistics were employed using Statulator Software (Chapman et al., 2014). The code keys for network identification, time slot identification, and genre identification entered are as follows:

Network identification:	ABC=1, CBS=2, NBC= 3, and FOX= 4.
Time slot:	7:00am= 7, 7:30am= 73, 8:00am= 8, 8:30am= 83, 9:00am= 9, 9:30am= 93, 10:00am= 10, 10:30am= 103, 11:00am= 11, and 11:30am= 113.
Genre type:	Children/educational/science= ces, Educational= e, Animal/educational/nature= aen, Educational/animal= ea, Educational/science= es.

Pilot Study Data Analysis

Frequency analysis was used to establish proportions. The variables that were analyzed during frequency analysis were tiered vocabulary words per show and network. Means were then calculated to identify the average number of T1, T2, and T3 words per show and network. Frequencies were calculated to determine proportions of tiered words per show description and across networks. Finally, results were used to formulate hypotheses as well as answer the pilot study research questions.

Pilot Study Limitations

The limitations of this pilot study included the non-representative sample size. This limitation was resolved in the major study. Another limitation was that specific show

descriptions were shorter in some program records and longer in others. Lastly, rather than having two researchers code the program descriptions, only one researcher performed the coding of the tiered words while the second coder learned the process.

Pilot Study Findings

RQ1

The proportion of television programs that are labeled with the genre of "educational" aired on Saturday mornings from 7:00am-12:00pm for one month on each network are as follows:

On NBC, 13.25% of all shows aired were labeled with the genre of "educational" (Earth Odyssey with Dylan Dreyer). On CBS, 14% of all shows aired were labeled with

the genre of "educational/children/science" (The Henry Ford's Innovation Nation with Mo Rocca). On ABC, 33% of all shows aired were labeled with the genre of "educational/animals/nature" (Wildlife Nation with Jeff Corwin) or "educational/animals" (oh, baby!). On FOX, 39% of all shows aired were labeled with the genre of "educational/science" (Xploration Outerspace, Xploration Awesome Planet and Life 2.0). ABC and FOX had a higher percentage of educational television programming aired on Saturday morning than NBC and CBS because they televised more than one educational program.

RQ2

The findings indicate that all networks included evidence of Tier 2 vocabulary words in program descriptions. The network with the highest frequency of T2 words was FOX with 11 shows and a 45.45% frequency of words per show descriptions (see table 3.2). The next highest frequency of T2 words was found on CBS with 3 shows and 44.23% of words being T2. NBC show descriptions contained 39.62% T2 words per description, and finally ABC shows evidenced 28.30% T2 words. The proportion of Tier 2 words across all observations (N=354) was 39.4%, which represents the estimated proportion used for the major study hypothesis (H1).

Table 1

Pilot Study - Frequency of words per show description across Tier 1, Tier2, and Tier 3 observed vocabulary words

Network Show Tiered Word Observations (N= 354)	Tier 1 Word Count *f*	Tier 2 Word Count *f*	Tier 3 Words Count *f*
CBS (n=52)	20	23	9
NBC (n=53)	27	21	5
ABC (n=106)	43	30	33
FOX (n=143)	39	65	39

Note. f is the frequency of observations.

Table 2

Pilot Study - Proportion of words per network across Tier 1, Tier2, and Tier 3 observed vocabulary words

Network Show description observations (N= 354)	Tier 1 words per network (proportion)	Tier 2 words per network (proportion)	Tier 3 words per network (proportion)
CBS (n=52)	38.46%	44.23%	17.31%
NBC (n=53)	50.94%	39.62%	9.43%
ABC (n=106)	40.57%	28.30%	31.13%
FOX (n=143)	27.27%	45.45%	27.27%

Additional Findings

When looking at the data in Table 3.1 (Frequency of words per show description across Tier 1, Tier2, and Tier 3 observed vocabulary words), CBS, which had the smallest amount of observed tiered vocabulary (n=52,) had the least amount of T1 words (*f*=20) per show out of all networks studied but it did not have the least amount of T2

(*f*=23) or T3 (*f*=9) words. NBC, which was the network with the second lowest amount of observed tiered vocabulary (n=53,) had the least amount of T2 (*f*=21) and T3 (*f*=5) words found per show. ABC, the network with the second highest amount of tiered word observations (n= 106), had the greatest amount of T1 words per show (*f*=43). Although FOX had the largest tiered word observations (n=143), there was not a significant difference between the amount of T1 and T3 words when compared to ABC, however, the amount of T2 words found on FOX (*f*=65) was double the amount found on ABC (*f*=30) when examining descriptions per show. A commonality across all networks was that T3 words were the least represented of all tiered vocabulary for each show.

In examining the data found in Table 3.2 (Proportion of words per across Tier 1, Tier2, and Tier 3 observed vocabulary words), NBC contained more T1 words as a network (50.94%) but FOX displayed the lowest proportion of T1 words as a network (27.27%) even though FOX aired triple the amount of educational television programs when compared to NBC. There was not a substantial difference between CBS (44.23%) and FOX (45.45%) of T2 words found per network although FOX contained more than double the amount of sampled words (n=143) when compared to CBS (n=52). The network with the highest proportion of T3 was ABC (31.13%), even though ABC's sample word size (n=106) was smaller than FOX (n=143); the network with the greatest amount of words investigated.

It is worth noting, regardless of their educational genre (*educational, animals/educational/nature*, *animals/educational, children/educational/science*, or *educational/science*), all of the program descriptions examined contained themes related to scientific concepts. Other non-fiction content areas, such as the arts, social studies, or

mathematics, were not present in the educational programs offered by networks during the time frame investigated on Saturday mornings. Lastly, FOX provided program descriptions for three educational shows between 7:00am=12:00pm, ABC provided program descriptions for two educational shows, and both CBS and NBC had only one program description each per Saturday.

Findings from the pilot study also supported Beck et al.'s (2013) claim that T2 words are frequently found in printed text. The total number of T2 words found throughout all show descriptions was 139, whereas the total of T1 words was 129 and T3 words were 86.

Pilot Study Conclusions

The methodical processes performed during the pilot study provided opportunities to practice coding techniques that were later replicated throughout the major study. The chance to implement the coding techniques utilized to identify and categorize tiered vocabulary words as either T1, T2, or T3 was of distinct importance and lent itself as "practice time" for the researcher to become extremely familiar with the operational definitions of each tier, particularly when words were identified as either being "unsure" or "multiple meaning". During this process, another researcher learned the coding process for the major study. This allowed both coders time to work out any issues or answer any questions that arose, while streamlining the coding process prior to the major study.

The pilot study served as an initial exploratory study which helped define the components of the major study. Until data was collected in the pilot study, specific pieces of information were unknown, such as: the particular educational genres for each

network, the time slot show times at which these programs aired between 7:00am-12:00pm, the length of each program (30 or 60 minutes), and the amount of educational television programs offered each Saturday by each network under investigation (CBS, NBC, FOX, ABC). Most importantly, pilot study findings provided estimated proportions for the major study hypotheses.

Major Study: A Metadata Survey of Tiered Academic Vocabulary in Educational Television Programs

Major Study Research Questions

After analyzing the findings from the pilot study, research questions for the major study were modified and hypotheses were formulated. The initial research question, which sought to identify the proportion of educational television programs aired on Saturday mornings, was eliminated because the findings were identified in the pilot study and would not change throughout the major study. The need for this question was redundant. Therefore, the research questions for the major study focused on identifying the frequencies of tiered vocabulary words within Saturday morning educational television programs, as well as the frequencies of tiered vocabulary words across the television networks. Instead of observing program descriptions online, the major study collected data from the programs themselves, as they were broadcasted on television during programmed time slots. RQ1 and RQ2 looked at tiered vocabulary within the actual television programs aired on particular networks. The research questions for the major study were:

RQ1

What proportion of Tier I, Tier II, and Tier III academic vocabulary words are found in Saturday morning educational programs across major broadcast television network (CBS, NBC, ABC, Fox) programs aired in the Long Island, New York area between 7:00 am and 12:00 pm?

RQ2

Which Broadcast Television Network (CBS, NBC, ABC, Fox) offers the most evidence of Tier II academic vocabulary found in educational programming aired in the Long Island, New York area on Saturday mornings between 7:00 am and 12:00 pm?

Major Study Research Design and Data Analysis

A quantitative content analysis was the research design employed for this study because it is a flexible research method for analyzing and describing texts. According to Hoffman et al. (2011) content analysis is a research tool that can be used to study the context of curriculum materials that can focus on the presence of certain words where researchers can quantify and analyze the presence and meanings of such words. This study sought to identify the frequencies of tiered vocabulary throughout the texts of educational programming.

After data was transcribed, words were coded using Beck et al.'s (2002) tiered system definitions model. Once coded, words were collected in a Google spreadsheet and identified as either Tier I, Tier II, or Tier III vocabulary. A second researcher coded the data to ensure inter-rater reliability using Cohen's Kappa testing. After coding the data, Statulator statistical software was employed to perform descriptive statistics to summarize the word tiers in order to address the research questions.

As the purpose was to look for differences between sets of nominal, categorical data, in more than two groups, with unmatched data, a Chi-squared Goodness of fit test was employed. According to Lavrakas (2008), the chi-square will test for significance between the categorical variables, which informs about the probability that this given sample estimate actually reflects the entire population. Pearson's chi-squared test verifies if there is a statistically significant difference between the observed frequencies and the expected frequencies in one or more categories (Salcedo & McCormick, 2015). The chi-square was used as a goodness-of-fit test, or as a test of independence, in bivariate analysis, measuring the significance of the relationship between the categorical variables.

Sample

The samples were chosen to analyze both the pilot and major study for three main reasons. First, educational television programs are a reliable and consistently available source of data for future studies seeking to replicate or expand upon this research. Second, historically networks have aired educational programming on Saturday mornings (Robb, 2016). Additionally, children living in L-SES homes watch educational television, and the most accessible and commonly used platform for educational content among lower-income children is broadcast television (Rideout, 2011). Finally, Saturday television programming offers an ideal opportunity for this research, as children from L-SES homes spend more time watching television on the weekends than during the week (Kearney & Levine, 2020).

The major study sample included:

For the major study, a population of one month of Saturday morning broadcast educational television programs were observed. The sample of actual shows is purposive

because it is selected from a population that contains a particular set of criteria (Terrell, 2016). The sample frame consisted of only educational television shows that aired during Saturday morning hours between 7:00am and 12:00pm.

To examine a sample size that will provide results at 95% confidence +5%, the sample size calculation based on the estimated proportion (Sproull, 2002), now 39.4%, yields

n=(z/e)2pq

where

n = sample size

z = curve value for the confidence interval (95% = 1.96)

e = tolerable error

p = estimated proportion (39.4%)

q = 1-p

n= 366

population size: 288,000 seconds of programming data

Sample size = minimum of 366 seconds of programming data (across 25 shows)

confidence level: 95%

margin of error: 5%

The estimated proportion is derived from the pilot study. The calculation yields the largest sample size required given the estimated proportions found in the pilot study. The calculation yields a required minimum sample size of 366 seconds of programming required at 95% confidence $\pm$5%.The final sample size for the major study was 750

seconds of programming to maintain consistent observations for 25 program clips to be observed at :30 seconds each.

Methods

Data collection procedures for the major study

1. Conducting content analysis on educational shows

After program descriptions across the population were observed and vocabulary word instances recorded, programs were watched, recorded using DVR technology with closed captioning turned on, transcribed into printed text for coding purposes, and then analyzed to identify tiered word usage in televised broadcasts.

For the four Saturdays in the study, each educational show aired on all four networks was examined. Because literally hundreds of words can emerge quickly during dialog, a sample of 30 seconds of dialogue broadcast for each show, observed at a random time during the show, for each network, were recorded and used for examination. On the four Saturdays studied, each educational show was examined and random samples from the show time slot were drawn to determine when in the program data was drawn for inclusion.

The following assignments were used for generating random 30 second time observation period possibilities for each show:

1 = during opening one minute (after credits)

2= at the middle point of the show

3= in the final one minute before the show ends.

If there was a commercial during the randomly assigned segment, the first 30 seconds prior to the commercial was recorded and analyzed. Furthermore, if the program was selected to be watched and analyzed within the last 30 seconds of the show (in the final one minute before the show ends), the last 30 seconds of dialogue was analyzed, excluding any credits at the end of the show.

Each show was recorded using a DVR, with closed captioning, on Optimum cable systems. Randomly selected portions of the show were chosen from three numbers pulled out of a hat and documented as either 1, 2, or 3 for data collection purposes. In order to transcribe the dialogue for coding purposes, each 30 second segment was recorded onto a memory card with a digital camera, as well as with an iPhone, to watch and rewatch the segment for accuracy during transcription. This also ensured that data would be saved for future reference as needed.

2. Coding Validation

After transcribing the 30 second segments of dialogue into text format, words were coded in the same fashion as the pilot study. A second coder was trained and then completed the same coding process to confirm accuracy. Once data was collected across two raters, Cohen's Kappa testing was completed across each network record set to ensure inter-rater reliability. A second rater also examined the shows closed captioning data to verify frequency word counts for each clip. Inter-rater reliability was calculated to be Tier I Kappa = .99, Tier II Kappa = 1.0, and Tier III Kappa = 1.0.

To ensure a valid data set prior to analysis, the coders conferred on seven records that were discrepant from the collection, which included six words from Tier I observations

and one word from Tier II observations. The records were reviewed by the two coders and the final data set of video observations was reviewed and amended to reflect concurring records.

Instruments

The instrument used to code words as either Tier I, Tier II, or Tier III vocabulary was an adapted version of the measurement tool created by Larson and Rhan (2015), which was based upon Beck et al.'s (2002) tiered system definitions model. Each definition was color coded with T1 as yellow, T2 as orange, and T3 as green. Coders crossed out articles of grammar (the, and, a…) and people's names, such as the host or presenter (Jeff), and then highlighted words in either yellow, orange, or green. Unsure words were circled and then re-analyzed, and words with multiple meanings were identified to determine how the word was used in the context of the dialogue prior to analysis. For example, the word "wild" in some instances was used to describe the location of an animal who lived in the wild, where in another instance, the word was used as an adjective to describe an untamed animal's behavior. This affected which tier the word most accurately fit.

Table 3

Tier I, Tier II, and Tier III operational definitions

Tier 1	Tier 2	Tier 3
the word: -is used and understood by young children -is found across most dialects, cultures, and geographical regions -does not need to be taught -is a basic word -frequently occurs in oral conversation (examples: family, farm, animal, baby, people)	the word: -is found across domains -is not as frequent in oral language as T1 words -is not commonly familiar to students -needs to be taught or explained (examples: discovers, exploring, patterns, rescued, social)	the word: -is domain specific -is specific to a particular dialect, culture, or geographical region -is only utilized in conversation when discussing a specific context -needs to be taught or understood within a particular context (examples: conservationists, saltmarsh, manatees, endangered, NASA, algorithms)

Hypothesis

Based on the results of the pilot study, these hypotheses were cast:

H1 The proportion of Tier 2 vocabulary words across CBS, NBC, ABC, and FOX television show clips is less than 39.4%.

H2 The proportion of Tier 2 vocabulary words in television show clips on CBS is less than 44.23%.

H3 The proportion of Tier 2 vocabulary words in television show clips on NBC is less than 39.62%.

H4 The proportion of Tier 2 vocabulary words in television show clips on ABC is less than 28.30%.

H5 The proportion of Tier 2 vocabulary words in television show clips on FOX is less than 45.45%.

Major Study Data Collection of Videos & Transcription

Step 1:

Starting points for 30 second video clips, with closed captioning turned on, were randomly selected (#1-first 30 seconds, #2-middle of the show between minutes 13-15 according to commercial placement, or #3 last 30 seconds of minutes between 26-29 according to when the show credits and commercials aired).

Step 2:

Using a digital camera recorder with a memory card, as well as an iPhone, a 30 second clip of each show, with closed captioning turned on, was recorded according to the randomized order.

Step 3:

Data was transcribed into a Google spreadsheet to code for Tired vocabulary. Then, the next clip was set up, documented, and transcribed.

In total, one month of Saturday morning educational television programming between the hours of 7:00 am-12:00 pm on channels CBS, NBC, ABC, AND FOX yielded 25 educational television shows, which were collected, transcribed, and analyzed.

Analyses

A frequency table was created for comparing observed and expected frequencies and proportions and 95% confidence intervals for Tier 1, Tier 2, and Tier 3 vocabulary word observations across each network data set and for all records combined. Total population of observed vocabulary words across all tiers was 990, which was a total of all each network count. Each network count was also analyzed. Observed proportions were estimated at equal levels.

A Chi-squared Goodness of fit test was conducted to investigate if the proportions are significantly different (Sheskin, 2003). Further comparisons of observed proportions with their corresponding expected proportions were conducted using z-tests to evaluate under- or over-representation of groups, if the chi-square test was found to be significant. A 5% level of significance was used to evaluate significance of Tier 2 words and network associations,with the p-value was considered significant if it was less than 0.05 in testing the hypotheses. The analyses were conducted using Statulator, an online statistical program (Dhand and Khatkar, 2014).

CHAPTER 4 RESULTS

RQ1

What proportion of Tier I, Tier II, and Tier III academic vocabulary words are found in Saturday morning educational programs across major broadcast television network (CBS, NBC, ABC, FOX) programs aired in the Long Island, New York area between 7:00 am and 12:00 pm?

Among tiered vocabulary word observations in 30 second show clips, the existence of Tier I vocabulary words represented 68.7% (±3%) of all tiered vocabulary words recorded from 990 instances across 25 shows and four network channels. Tier II vocabulary words represented 20.4% (±3%). Tier III vocabulary words represented 10.9% (±2%).

RQ2

Which Broadcast Television Network (CBS, NBC, ABC, FOX) offers the most evidence of Tier II academic vocabulary found in educational programming aired in the Long Island, New York area on Saturday mornings between 7:00 am and 12:00 pm?

NBC shows offer the most evidence of T2 words. When broken down by 30 second show clips and the amount of T2 words found per clip, FOX had the highest words observed with 90/202 total T2 words found across networks. CBS, with a sample size of n=3 had a mean of 9.33 T2 words per show, compared to FOX's sample of n=11 shows, which averaged 8.18 T2 words. NBC led in this with an average of 10 T2 words. Although FOX airs more than triple the amount of educational television programming of

words per show, Saturday morning shows from NBC and CBS offer viewers more exposure to Tier II words in educational programming between 7:00am and 12:00pm.

Table 4

Total Tiered vocabulary words observed in educational/ informational 30 second show clips on CBS, NBC, ABC, and FOX networks

Network	Tier I words	Tier II words	Tier III words	Total network
CBS	105	28	4	137
NBC	57	30	10	97
ABC	216	54	32	302
FOX	302	90	62	454
Tier totals	680	202	108	990

Table 5

Mean vocabulary words observed in educational/ informational 30 second show clips on CBS, NBC, ABC, and FOX networks

Network shows	Tier I words $\bar{X}$	Tier II words $\bar{X}$	Tier III words $\bar{X}$
CBS (n=3)	35	9.33	1.33
NBC (n=3)	19	10	3.33
ABC (n=8)	27	6.75	4
FOX (n=11)	27.44	8.18	5.64

Hypothesis Testing

H1

The proportion of Tier 2 vocabulary words across CBS, NBC, ABC, and FOX television show clips is less than 39.4%.

The observed data suggest that Tier II vocabulary word instances of the total population were $f = 202$ (N=990). Tier II words across all observations was 20% $\pm$ 3. H1, that less than 39% of Tier II vocabulary words are evident across CBS, NBC, ABC, and

FOX television show clips, was supported. Chi-squared Goodness of fit was used to test the hypothesis:

$X^2 = 570.21$, $df = 2$, $p<0.001$

A low p value points to rejecting the null hypothesis.

Table 6

Tier I, Tier II, and Tier III proportions across all observed vocabulary words

Tiered Words	Observed Counts (Proportions)	95% CI	Expected Counts (Proportions)	Z Value2	P Value3
Tier I	680 (0.69)	0.66, 0.72	330 (0.33)	23.60	<0.001
Tier II	202 (0.20)	0.18, 0.23	198 (0.33)	-8.632	<0.001
Tier III	108 (0.11)	0.09, 0.13	396 (0.33)	-14.97	<0.001

Observed frequencies and their 95% confidence intervals along with their corresponding expected frequencies and proportions are presented in Table 4.3. The chi-square test was significant (p-value: <0.001), suggesting that proportions were significantly different between Tier I, Tier II, and Tier III group observations. Further multiple comparisons by z-test indicated that Tier I words were significantly over-represented whereas Tier II and Tier III were significantly under-represented compared to the expectations (see Table 4.3).

H2

The proportion of Tier 2 vocabulary words in television show clips on CBS is less than 44.23%.

The observed data suggest that Tier II vocabulary word instances found in CBS shows was *f* = 28 (n=137) with a proportion of 20% +4 . H2, that less than 44.23% of Tier II vocabulary words are evident across CBS television show clips, was supported. The low p value for Tier II instances points to rejecting the null hypothesis. Chi-squared Goodness of fit was used to test the hypothesis:

X^2 = 121.94, *df* =2, p<0.001

A low p value points to rejecting the null hypothesis.

Table 7

Tier II proportions across observed vocabulary words on CBS shows

Tiered Words	Observed Counts (Proportions)	95% CI	Expected Counts (Proportions)	Z Value2	P Value3
Tier I	105 (0.77)	0.70, 0.84	46 (0.33)	10.75	<0.001
Tier II	28 (0.20)	0.14, 0.27	46 (0.33)	-3.20	0.001
Tier III	4 (0.03)	0.00, 0.06	46 (0.33)	-7.55	<0.001

Observed frequencies and their 95% confidence intervals along with their corresponding expected frequencies and proportions are presented in Table 4.4. The Chi-squared Goodness of fit was significant, suggesting that proportions were significantly different between groups. Further multiple comparisons by z-test indicated that Tier I words were significantly over-represented whereas Tier II and Tier 3 were significantly under-represented compared to the expectations (see Table 4.4).

H3

The proportion of Tier 2 vocabulary words in television show clips on NBC is less than 39.62%.

The observed data suggest that Tier II vocabulary word instances found in NBC shows was *f* = 30 (n=97) with a proportion of 31% +9 . H3, that less than 39.62% of Tier II vocabulary words are evident across NBC television show clips, was not supported. The high p value (0.615) for Tier II instances points to accepting the null hypothesis.

Chi-squared Goodness of fit was used to test the hypothesis:

X^2 = 34.41, *df* =2, p<0.001

Table 8

Tier II proportions across observed vocabulary words on NBC shows

Tiered Words	Observed Counts (Proportions)	95% CI	Expected Counts (Proportions)	Z Value2	P Value3
Tier I	57 (0.59)	0.49, 0.69	46 (0.33)	5.31	<0.001
Tier II	30 (0.31)	0.22, 0.40	46 (0.33)	-0.50	0.615
Tier III	10 (0.10)	0.04, 0.16	46 (0.33)	-4.81	<0.001

Observed frequencies and their 95% confidence intervals along with their corresponding expected frequencies and proportions are presented in the table. The Chi-squared Goodness of fit was significant (p-value: <0.001), suggesting that proportions were significantly different between groups. Further multiple comparisons by z-test indicated that Tier 1 words were significantly over-represented whereas Tier 3 words

were significantly under-represented compared to the expectations. Proportions for Tier 2 words were not significantly different from what was expected (see Table 4.5).

H4

The proportion of Tier 2 vocabulary words in television show clips on ABC is less than 28.30%.

The observed data suggest that Tier II vocabulary word instances found in ABC shows were $f = 54$ (n=302) with a proportion of 18% ± 4 . H4, that less than 28.30% of Tier II vocabulary words are evident across ABC television show clips, was supported. The low p value for Tier II instances points to rejecting the null hypothesis.

Chi-squared Goodness of fit was used to test the hypothesis:

$X^2 = 200.61$, $df = 2$, $p<0.001$

Table 9

Tier II proportions across observed vocabulary words on ABC shows

Tiered Words	Observed Counts (Proportions)	95% CI	Expected Counts (Proportions)	Z Value2	P Value3
Tier I	216 (0.72)	0.66, 0.77	101 (0.33)	14.08	<0.001
Tier II	54 (0.18)	0.14, 0.22	101 (0.33)	-0.570	<0.001
Tier III	32 (0.11)	0.07, 0.14	101 (0.33)	-8.38	<0.001

Observed frequencies and their 95% confidence intervals along with their corresponding expected frequencies and proportions are presented in Table 4.6. The Chi-squared Goodness of fit was significant (p-value: <0.001), suggesting that proportions were significantly different between tiered word groups. Further multiple comparisons by

z-test indicated that Tier 1 words were significantly over-represented whereas Tier 2 and Tier 3 were significantly under-represented compared to the expectations (see Table 4.9).

H5

The proportion of Tier 2 vocabulary words in television show clips on FOX is less than 45.45%.

The observed data suggest that Tier II vocabulary word instances found in FOX shows was $f = 90$ (n=454) with a proportion of 20% ± 4 . H5, that less than 45.45% of Tier II vocabulary words are evident across FOX television show clips, was supported. The low p value for Tier II instances points to rejecting the null hypothesis.

Chi-squared Goodness of fit was used to test the hypothesis:

$X^2 = 227.59$, $df = 2$, $p<0.001$

Table 10

Tier II proportions across observed vocabulary words on FOX shows

Tiered Words	Observed Counts (Proportions)	95% CI	Expected Counts (Proportions)	Z Value2	P Value3
Tier I	302 (0.67)	0.62, 0.71	151 (0.33)	15.00	<0.001
Tier II	90 (0.20)	0.16, 0.23	151 (0.33)	-6.11	<0.001
Tier III	62 (0.14)	0.10, 0.17	151 (0.33)	-8.89	<0.001

Observed frequencies and their 95% confidence intervals along with their corresponding expected frequencies and proportions are presented in Table 4.7. The Chi-squared Goodness of fit was significant (p-value: <0.001), suggesting that proportions were significantly different between groups. Further multiple comparisons by z-test

indicated that Tier 1 words were significantly over-represented whereas Tier 2 and Tier 3 were significantly under-represented compared to the expectations (see Table 4.7)

Additional Findings

Concurrent with pilot study findings, the content of the television shows, regardless of educational genre, revolved around scientific concepts. In addition, according to the 30 second show clip transcriptions from the major study, the pilot study program descriptions accurately described the content of the television shows aired.

Another interesting discovery fell in accordance with Beck et al.'s (2013) claim that T1 words frequently occur in oral conversation, with a total of 680/990 words identified as T1 within 30 second show clips found across all networks. T1 more than tripled the amount of T2 words found (202/990), supporting Beck et al's (2013) description of T2 words occurring less frequently throughout conversation when compared to T1 words. As with the pilot study, T3 words were the least occurring words found across all networks.

A catalyst for this study was the research conducted by Larson and Rhan in 2015 where they examined and categorized targeted vocabulary words from Sesame Street's *Word on the Street* daily vocabulary segment as either Tier I, Tier II, or Tier III. Unlike the results found by Larson and Rhan (2015), where Tier II words were more frequently found than Tier I or Tier III in Sesame Street's *Word on the Street* vocabulary segments, this study found that Tier I words dominated over Tier II and Tier III words in Saturday morning educational television programs found across four broadcast television networks.

When further examining Table 4.1 (Total Tiered vocabulary words observed in educational/ informational 30 second show clips on CBS, NBC, ABC, and FOX networks) and Table 4.2 (Mean vocabulary words observed in educational/ informational 30 second show clips on CBS, NBC, ABC, and FOX networks), curious finding emerged. FOX presents the highest amount of T1 (302 words) , T2 (90 words), and T3 (62 words) words as a network (454/990 words). This finding is not surprising as FOX airs three educational television programs each Saturday, the most out of any network studied. However, as a network, FOX did not have the highest mean number of T2 vocabulary words. FOX averaged the highest number of T1 words (27.44) and T3 words (5.64), but NBC averaged the highest number of T2 words (10)per show.

CHAPTER 5 DISCUSSION

Implications of Findings

An ultimate goal of this research was to potentially discover a supplemental means to increase L-SES students' Tier II academic vocabulary through the viewing of educational television found on free broadcast networks. Acknowledging the findings discovered by numerous researchers who studied L-SES students' relationship with television watching (Rideout & Robb, 2020; Rideout 2017, Rideout 2011, Yang-Huang, et al., 2017; Fletcher et al., 2014; Linebarger et al.,2013), their deficits in vocabulary (Lawrence et al, 2012; Noel et al., 2008; Justice et al., 2005), and the positive effects television can have on vocabulary growth (Neuman et al. 2019; Peters & Webb, 2018; Powell & Roberts, 2014; Kirkorian et al., 2008; King, 2000) prompted the need for this study to be conducted.

Vocabulary can be acquired incidentally from oral conversation (Justice et al., 2005) as well as from viewing television (Peters & Webb, 2018; Larson & Rhan, 2015; Rice et al.,1990), and by recognizing that Tier II words are important for students to learn (Beck et al., 2013), studies, such as this one, examining tiered vocabulary in educational content may assist in closing the vocabulary gap for students with vocabulary deficits. In 2018, Peters and Webb's study discovered that the more frequently words occur throughout a televised program, the more likely the viewer is to take notice and recall the words.

Results from this study indicate that Saturday morning educational television programs aired on NBC and CBS networks expose viewers to the highest number of Tier

II words – more than educational programming aired on FOX and ABC during that same time frame.

Rideout (2011) revealed that children living in lower income homes were more likely to consume educational television when compared to peers from higher socio-economic groups. In 2020, Rideout and Robb's study discovered that parents of children living in L-SES homes reported positive effects from their children viewing screen media, such as television and videos. Findings from this study conclude that it might be beneficial for students living in L-SES households to view Saturday morning educational broadcast television found on NBC and CBS networks because they will have been exposed to a greater amount of Tier II words when compared to them viewing educational programs found on FOX or ABC. These findings should be shared with policy makers, broadcast networks, educators, and parents so all parties can determine how they can move forward to assist in narrowing vocabulary deficits of children, particularly those living in L-SES homes.

Limitations

Limitations to this study include the restricted amount of educational programs studied on Saturdays between 7:00 am and 12:00 pm. This is a modest amount of time to study educational television throughout the week. A second limitation was the amount of broadcast networks examined. Including additional broadcast networks would provide a more accurate representation of all free educational television programming available to the public. Finally, the narrow time frame analysis of only one month's worth of Saturday's television shows was constraining and only provided a fraction of Saturday

morning educational programs rather than consisting of the entire span of a season of shows on each network.

Recommendations for Future Research

Future research might include studying major broadcast network programming across an entire year or years, to show patterns of vocabulary tier instances, rather than one month. Furthermore, studies might include investigating television programming that lies outside the three hour rule, but may be designated as educational or informational in genres found throughout the week rather than the limited number of shows analyzed on Saturdays between the hours of 7:00 am to 12:00 pm. In addition, the percentage of L-SES children who watch educational television programming found on these major broadcast networks is unknown; therefore future studies might include a study of L-SES children and their television viewing preferences.

Additional studies may seek to employ a qualitative research component, examining how tiered words are presented or instructed, either incidentally or explicitly, to the viewer. Furthermore, researchers may want to conduct an experimental study, measuring students' academic vocabulary growth after viewing educational broadcast television programs.

Since the findings of this study did not concur with the results found by Larson and Rhan (2015) when they examined targeted vocabulary words aired on educational television found on a non-profit public broadcast service, future researchers might want to explore vocabulary words contained within educational programs found across all platforms, such as broadcast networks, public broadcast services, streaming services, and

cable television. Researchers can investigate and compare which platform exposes, as well as instructs, viewers to high proportions of Tier II vocabulary.

Although this research inspected educational television, other forms of media and content can also be investigated for proportions of tiered vocabulary. For instance, educational publishing houses, textbooks, student materials, and children's literature, as well as the authors who write for children, can all be studied and compared for proportions of tiered vocabulary.

Future Practice

The results of this research should be shared with educators who teach L-SES students with vocabulary deficits. Teachers can make recommendations to parents and students regarding which educational television Saturday morning programs would be beneficial to watch. This can be done outside of school as a supplemental activity for students as a means to increase their exposure to Tier II words. Based upon these results, students would have more exposure to Tier II words while viewing educational Saturday morning programs aired on NBC and CBS. Furthermore, teachers may choose to include educational television programs from NBC and CBS as part of their instructional resources.

In addition, broadcast networks may seek to examine their own educational Saturday morning programs to identify the amount of Tier II words their programs offer viewers. After identifying the proportion of Tier II words contained in their educational programming, networks may decide to increase the amount of Tier II words spoken during these programs to assist with closing the vocabulary gap among some of their L-SES viewers.

While the intention may not be to increase viewer's vocabulary through educational programs per say, networks can begin to make the attempt to do so simply by examining the vocabulary contained within the scripts and dialogue for each show. If the goal of educational television is ultimately to educate the viewer, networks need to identify and then evaluate their actual educational objective for each program they air to the public. Networks would best be served to include educational consultants that not only provide educational content about particular topics, such as the scientific concepts presented throughout all of the shows investigated, but the actual words used to inform the public about the topics themselves. Next, networks need to consider if they are essentially educating viewers or merely exposing viewers to information. When educating a viewer, networks should analyze the vocabulary content found within their educational programs and then determine how they can possibly increase the amount of Tier II academic words mentioned.

This is a call for policy makers, educators, and parents to work alongside broadcast networks to ensure that public educational television is educating viewers to the best of its ability as a means to benefit society overall, and a major goal should be to increase viewers exposure to and understanding of the most important academic vocabulary words; Tier II. Acknowledging the important associations found between vocabulary and comprehension (Guo, Wang, Hall, Breit-Smith, & Busch, 2016; Hirsch, 2003; Kucan & Sullivan-Palincsar, 2011; Lane & Allen, 2010; Silverman & Crandel, 2010) by attempting to improve viewer's vocabulary acquisition may only assist in developing overall literacy amongst the population of people watching educational television.

The FCC may help support this initiative by requiring stringent guidance and mandates that require broadcast networks to utilize educational television as a supplemental teaching tool rather than just air programs about non-fiction topics. By requiring networks to examine the types of words expressed throughout their programs, and then possibly investigate how those words are presented or explained to viewers, is a step forward in attempting to increase vocabulary acquisition throughout society as a whole, which is beneficial to viewers of all socio-ecomic status groups.

Conclusions

A content analysis of Saturday morning educational television on free public broadcast networks (CBS, NBC, ABC, FOX) in order to identify the frequencies and proportions of tiered academic vocabulary, with a particular emphasis on identifying Tier II words, throughout the dialogue found within each television program was performed. A second goal was to identify the network with the most frequently occurring Tier II words to potentially be employed as a supplemental teaching tool for incidental vocabulary acquisition.

Just as studies by Neuman et al. (2019), and Larson and Rhan (2015), and Jalongo and Sobolak (2011) identified the usefulness of content analysis of educational programing, this study aimed to expand on that research lens methodology and offers a new framework for research involving tiered vocabulary. This process has been grounded through emulation of previous studies. It now offers another pathway for future researchers, students, and educators to explore tiered vocabulary words across not only television, but other forms of moving image media and text-based descriptors.

Insights made through content analysis of educational television can be further expanded to use the same methods executed in this study to provide a reusable approach to testing rhetorical and textual works. Establishing tiered vocabulary benchmarks could be a future focus for writers and producers of educational and informational television programming. These benchmarks could help establish literacy levels with regard to vocabulary instruction. Meaning, some networks and their programming may be identified in the future as containing high levels of Tier II vocabulary words, which could help enhance comprehension for differentiated learners. The growth of understanding metadata, such as vocabulary words embedded in content offers future opportunities to establish new patterns of literacy contexts which may enable stronger foundations to the teaching and learning of reading.

REFERENCES

Allan, S., & Thussu, D. K. (2010). Television News in the Era of Global Infotainment. In *The Routledge Companion to News and Journalism* (pp. 360–361). essay, Routledge.

Aldukhayel, D. M. (2022). Comparing L2 incidental vocabulary learning through viewing, listening, and reading. *Journal of Language Teaching and Research*, *13*(3), 590–599. https://doi.org/10.17507/jltr.1303.15

American Psychological Association. (2017, July). *Education and socioeconomic status factsheet*. American Psychological Association. Retrieved December 28, 2022, from https://www.apa.org/pi/ses/resources/publications/education

Ashcroft, R. J., Garner, J., & Hadingham, O. (2018). Incidental vocabulary learning through watching movies. *Australian Journal of Applied Linguistics*, *1*(3), 135–147. https://doi.org/10.29140/ajal.v1n3.89

Beck, I., McKeown, M., & Kucan, L. (2002). *Bringing Words to Life* (1st ed.). The Guilford Press.

Beck, I., McKeown, M., & Kucan, L. (2005). Choosing Words to Teach. In E. Hiebert & M. Kucan, *Teaching and Learning Vocabulary: Bringing Research to Practice* (1st ed., p. 212). Routledge. Retrieved 7 November 2020, from https://books.google.co.uk/books?hl=en&lr&id=v6aPAgAAQBAJ&oi=fnd&pg=PA211&dq=choosing+words+to+teach&ots=Tn-zuvbLNh&sig=biEppAknDHveV6XMvOryIvpylWI&redir_esc=y&pli=1#v=onepage&q=choosing%20words%20to%20teach&f=false

Beck, I., McKeown, M., & Kucan, L. (2013). *Bringing Words to Life* (2nd ed.). The Guilford Press.

Bronfenbrenner, U. (2005). Ecological Models of Human Development. In M. Gavin & M. Cole, *Readings on Development of Children* (4th ed., pp. 3-5). Worth. Retrieved 30 September 2020, from https://books.google.com/books?hl=en&lr=&id=0VIROZKuKNsC&oi=fnd&pg=PA3&dq=ecological+models+of+human+development&ots=8q2-PSpfXB&sig=qqQ3VyBoG1xfwic9tkl-HADIyd0#v=onepage&q=ecological%20models%20of%20human%20development&f=false

Broadcast TV Transition: What to Watch For. (2020). Retrieved 28 January 2020, from https://www.fcc.gov/TVrescan

Broadcast television dictionary definition | broadcast television defined. Yourdictionary.com. (2020). Retrieved 31 August 2020, from https://www.yourdictionary.com/broadcast-television.

Brushe, M. E., Lynch, J., Reilly, S., Melhuish, E., Mittinty, M. N., & Brinkman, S. A. (2021). The education word gap emerges by 18 months: Findings from an australian prospective study. *BMC Pediatrics*, *21*(1), 1–9. https://doi.org/10.1186/s12887-021-02712-1

Cahill, M., & Bigheart, J. (2015, November 30). *What can librarians learn from Elmo, sid, and Dora? applying the principles of educational television to storytime.* Knowledge Quest. Retrieved December 11, 2022, from https://eric.ed.gov/?id=EJ1087541

Chapman and Hall/CRC. Dhand, N. K., & Khatkar, M. S. (2014). Statulator: An online calculator that conducts statistical analyses and interprets the results. Retrieved 29 July 2022 from http://statulator.com.

Collins, G., Goforth, A., & Ambrose, L. (2016). The Effects of Teacher Professional Development on Rural Students' Lexical Inferencing Skills. *Rural Special Education Quarterly*, *35*(3), 20-29. https://doi.org/10.1177/875687051603500304

Dhand, N. K., & Khatkar, M. S. (2014). Statulator: An online calculator that conducts statistical analyses and interprets the results. Retrieved 28 August 2022 from http://statulator.com.

Definition of BROADCAST. Merriam-webster.com. (2020). Retrieved 31 August 2020, from https://www.merriam-webster.com/dictionary/broadcast.

Definition of EDUCATIONAL TELEVISION. Merriam-webster.com. (2020). Retrieved 31 August 2020, from https://www.merriam-webster.com/dictionary/educational%20television.

Edgerton, G. R., & Rollins, P. C. (2001). In *Television histories shaping collective memory in the media age*. essay, Univ. Press of Kentucky.

Fletcher, E., Whitaker, R., Marino, A., & Anderson, S. (2014). Screen Time at Home and School among Low-Income Children Attending Head Start. Child Indicators Research, 7(2), 421-436. https://doi.org/10.1007/s12187-013-9212-8

Fuenzalida, V. (2017). Quality Criteria in Narrative and Script Writing for Children's Television (Ages 0-6). *Communication Research Trends*, 36(2), 4-16.

Fisch, S. (2002). Researchers for Educational Television Programs. *Encyclopedia of Communication and Information* Volume 3. 882-884. New York: MacMillian Reference USA.

Guo, Y., Wang, S., Hall, A., Breit-Smith, A., & Busch, J. (2015). The Effects of Science Instruction on Young Children's Vocabulary Learning: A Research Synthesis. *Early Childhood Education Journal,* 44(4), 359-367. http://dx.doi.org/10.1007/s10643-015-0721-6

Hair, N. L., Hanson, J. L., Wolfe, B. L., & Pollak, S. D. (2015). Association of Child Poverty, Brain Development, and academic achievement. *JAMA Pediatrics*, *169*(9), 822. https://doi.org/10.1001/jamapediatrics.2015.1475

Hart, B., & Risley, T. R. (2003). *Early catastrophe - welcome to Laulima!* The Early Catastrophe the 30 Million Word Gap. Retrieved December 29, 2022, from https://laulima.hawaii.edu/access/content/user/cawdery/ED_282/EARLY_CATASTROPHE_ED_297.pdf

Heintz, K., & Wartella, E. (2012). Young Children's Learning from Screen Media. Communication Research Trends, 31(3), 22-27.

Hirsch, E. D. (2003). Reading Comprehension Requires Knowledge- of Words and the World. *American Educator*, 10-16.

Hoffman, J., Wilson, M., Martinez, R., & Sailors, M. (2011). Content Analysis: The Past, Present, and Future. In N. Duke & M. Mallette, *Literacy Research Methodologies* (2nd ed., pp. 28-49). Guilford.

HQ, P. (2013). What is Bronfenbrenner's Ecological Systems Theory? - The Psychology Notes Headquarters. Retrieved 7 February 2020, from https://www.psychologynoteshq.com/bronfenbrenner-ecological-theory/

Jalongo, M., & Sobolak, M. (2010). Supporting Young Children's Vocabulary Growth: The Challenges, the Benefits, and Evidence-Based Strategies. *Early Childhood Education Journal*, 38(6), 421-429. https://doi.org/10.1007/s10643-010-0433-x

Jordan, A. (2004). The Three-Hour Rule and Educational Television for Children. *Popular Communication*, 2(2), 103-118. doi: 10.1207/s15405710pc0202_3

Justice, L., Meier, J., & Walpole, S. (2005). Learning New Words From Storybooks. *Language, Speech, And Hearing Services In Schools*, 36(1), 17-32. https://doi.org/10.1044/0161-1461(2005/003)

Kearney, M., & Levine, P. (2020). Role Models, Mentors, and Media Influences. The Future Of Children, 30(2020), 83-106. https://doi.org/10.1353/foc.2020.0006

King, K. (2000). Educational Television: "Let's Explore Science". *Journal Of Science Education And Technology,* 9(3), 227-244.

Kirkorian, H., Wartella, E., & Anderson, D. (2008). Media and Young Children's Learning. *The Future Of Children*, 18(1), 39-54. https://doi.org/10.1353/foc.0.0002

Kokla, N. (2021, March 20). *Peppa pig: An innovative way to promote formulaic language in pre-primary EFL classrooms*. Research Papers in Language Teaching and Learning. Retrieved December 11, 2022, from

https://www.academia.edu/45586046/Peppa_Pig_An_innovative_way_to_promote_formulaic_language_in_pre_primary_EFL_classrooms

Kucan, L., & Sullivan Palincsar, A. (2011). Locating Struggling Readers in a Reconfigured Landscape. In M. Kamil, P. Pearson, E. Birr Moje & P. Afflerbach, *Handbook of Reading Research Volume IV* (p. 348). New York: Routledge.

Lane, H., & Allen, S. (2010). The Vocabulary-Rich Classroom: Modeling Sophisticated Word Use to Promote Word Consciousness and Vocabulary Growth. *The Reading Teacher*, 63(5), 362-370. http://dx.doi.org/10.1598/rt.63.5.2

Larson, A., & Rahn, N. (2015). Vocabulary Instruction on Sesame Street : A Content Analysis of the Word on the Street Initiative. *Language, Speech, And Hearing Services In Schools*, 46(3), 207-221. doi: 10.1044/2015_lshss-14-0079

Lavrakas, P. (2008). Chi-Square - SAGE Research Methods. Retrieved 8 March 2020, from http://methods.sagepub.com/reference/encyclopedia-of-survey-research-methods/n64.xml

Lawrence, J., Capotosto, L., Branum-Martin, L., White, C., & Snow, C. (2012). Language proficiency, home-language status, and English vocabulary development: A longitudinal follow-up of the Word Generation program. *Bilingualism: Language And Cognition*, 15(3), 437-451. https://doi.org/10.1017/s1366728911000393

Linebarger, D., Moses, A., Garrity Liebeskind, K., & McMenamin, K. (2013). Learning vocabulary from television: Does onscreen print have a role?. *Journal Of Educational Psychology*, 105(3), 609-621. doi: 10.1037/a0032582

Lineberg, Anja, Manja Attig, and Sabine Weinert. "Social Disparities in the Vocabulary of 2-Year-Old Children and the Mediating Effect of Language-Stimulating Interaction Behavior." *Journal for Education Research Online* 12, no. 2 (2020): 12–35.

Määttä, S., Kaukonen, R., Vepsäläinen, H., Lehto, E., Ylönen, A., & Ray, C. et al. (2017). The mediating role of the home environment in relation to parental educational level and preschool children's screen time: a cross-sectional study. *BMC Public Health*, 17(1), 2. https://doi.org/10.1186/s12889-017-4694-9

Mestre, J. P., Fisch, S. M., Kirkorian, H., & Anderson, D. (2009). Transfer of Learning in Informal Education: The Case of Television. In *Transfer of learning from a modern multidisciplinary perspective* (pp. 371–389). essay, IAP.

Maynard, K., Pullen, P., & Coyne, M. (2010). Teaching Vocabulary to First-Grade Students Through Repeated Shared Storybook Reading: A Comparison of Rich and Basic Instruction to Incidental Exposure. *Literacy Research And Instruction*, *49*(3), 209-242. https://doi.org/10.1080/19388070902943245

Neuman, S., Wong, K., Flynn, R., & Kaefer, T. (2019). Learning vocabulary from educational media: The role of pedagogical supports for low-income preschoolers. *Journal Of Educational Psychology*, 111(1), 32-44. doi: 10.1037/edu0000278

Neuman, S., Samudra, P., Wong, K., & Kaefer, T. (2019). Scaffolding attention and partial word learning through interactive coviewing of educational media: An eye-tracking study with low-income preschoolers. *Journal Of Educational Psychology*. doi: 10.1037/edu0000428

Neuman, S. B., Flynn, R., Wong, K., & Kaefer, T. (2020). Quick, incidental word learning in educational media: All contexts are not equal. *Educational Technology Research and Development*, *68*(6), 2913–2937. https://doi.org/10.1007/s11423-020-09815-z

NOEL, M., PETERSON, C., & JESSO, B. (2008). The relationship of parenting stress and child temperament to language development among economically disadvantaged preschoolers. *Journal of Child Language*, 35(4), 823-843. https://doi.org/10.1017/s0305000908008805

Optimum TV Channel Guide. Optimum. (n.d.). Retrieved December 29, 2022, from https://www.optimum.net/tv/guide

Peters, E., & Webb, S. (2018). Incidental Vocabulary Acquisition Through Viewing L2 Television and Factors That Affect Learning. *Studies In Second Language Acquisition*, 40(3), 551-577. doi: 10.1017/s0272263117000407

Peters, E. (2020, January). *[PDF] Introduction to the special issue language learning from multimodal input: Semantic scholar*. Semantic Scholar. Retrieved December 17, 2022, from https://www.semanticscholar.org/paper/INTRODUCTION-TO-THE-SPECIAL-ISSUE-LANGUAGE-LEARNING-Peters/47b89270830e1214ea9b979b36460f450d348752

Piotrowski, J. T. (2014). Participatory cues and program familiarity predict young children's learning from educational television. *Media Psychology*, *17*(3), 311–331. https://doi.org/10.1080/15213269.2014.932288

Pollard-Durodola, S., Gonzalez, J., Simmons, D., Kwok, O., Taylor, A., & Davis, M. et al. (2011). The Effects of an Intensive Shared Book-Reading Intervention for

Preschool Children at Risk for Vocabulary Delay. *Exceptional Children*, 77(2), 161-183. https://doi.org/10.1177/001440291107700202

Powell III, J., & Roberts, M. (2014). Effects of television viewing on child development. Encyclopedia Britannica. Retrieved 29 September 2020, from https://www.britannica.com/topic/effects-of-television-viewing-1995158.

Revell, G. (2003). Educating Via Entertainment Media: the Sesame Workshop Approach. *ACM Computers in Entertainment* 1 (1): 1-9.

Rice, M., Huston, A., Truglio, R., & Wright, J. (1990). Words from "Sesame Street": Learning vocabulary while viewing. Developmental Psychology, 26(3), 421-428. https://doi.org/10.1037/0012-1649.26.3.421

Rideout, V. (2011). Zero to Eight; Children's Media Use in America. Ftc.gov. Retrieved 6 October 2020, from https://www.ftc.gov/sites/default/files/documents/public_comments/california-00325%C2%A0/00325-82243.pdf.

Rideout, V. (2017). The Common Sense Census: Media Use by Kids Age Zero to Eight, 2017. Common Sense Media. Retrieved 20 July 2022, from https://www.commonsensemedia.org/research/the-common-sense-census-media-use-by-kids-age-zero-to-eight-2017.

Rideout, V., & Robb, M. (2020). The Common Sense Census: Media Use by Kids Age Zero to Eight, 2020. Common Sense Media. Retrieved 20 July 2022, from https://www.commonsensemedia.org/research/the-common-sense-census-media-use-by-kids-age-zero-to-eight-2020.

Robb, D. (2016). Broadcast Networks Abandoning Preteen Saturday Morning Kids Shows – Deadline. Deadline.com. Retrieved 6 November 2020, from https://deadline.com/2016/06/kids-tv-shows-saturday-mornings-fcc-loophole-advertising-1201774658/#!.

Rupley, W., Nichols, W., Mraz, M., & Blair, T. (2012). Building Conceptual Understanding through Vocabulary Instruction. *Reading Horizons*, *51*(4), 301.

Salcedo, J., & McCormick, K. (2015). *SPSS Statistics for Dummies* (3rd ed., pp. 225-227). Wiley.

Silverman, R., & Crandell, J. (2010). Vocabulary Practices in Prekindergarten and Kindergarten Classrooms. *Reading Research Quarterly*, 45(3), 318-340. http://dx.doi.org/10.1598/rrq.45.3.3

Sheskin, D.J. (2011). Handbook of Parametric and Nonparametric Statistical Procedures (5th ed.). Boca Raton: Chapman and Hall/CRC.

Smith, S. (2020). Academic vocabulary. Eapfoundation.com. Retrieved 31 August 2020, from https://www.eapfoundation.com/vocab/academic/.

Sorenson Duncan, T., & Paradis, J. (2019). How does maternal education influence the linguistic environment supporting bilingual language development in Child Second Language Learners of English? *International Journal of Bilingualism*, *24*(1), 46–61. https://doi.org/10.1177/1367006918768366

Soto, X., Seven, Y., McKenna, M., Madsen, K., Peters-Sanders, L., Kelley, E., & Goldstein, H. (2020). Iterative Development of a Home Review Program to Promote Preschoolers' Vocabulary Skills: Social Validity and Learning

Outcomes. *Language, Speech, And Hearing Services In Schools*, *51*(2), 371-389. https://doi.org/10.1044/2019_lshss-19-00011

Sproull, N. L. (2002). *Handbook of Research Methods: A Guide for practitioners and students in the Social Sciences* (2nd ed.). Scarecrow Press.

St. John, P., & Vance, M. (2014). Evaluation of a principled approach to vocabulary learning in mainstream classes. *Child Language Teaching And Therapy*, 30(3), 255-271. https://doi.org/10.1177/0265659013516474

Terrell, S. (2016). *Writing a Proposal for Your Dissertation*. The Guilford Press.

Tsurinaa1, E. O., & Kuryliakb2, V. V. (2022, June 30). *Research of infotainment in the Children's segment of Television*. Global Media Journal. Retrieved December 11, 2022, from https://www.globalmediajournal.com/open-access/research-of-infotainment-in-the-childrens-segment-of-television.php?aid=91598

Wang, Y. (T. (2019). Effects of L1/L2 captioned TV programs on students' vocabulary learning and comprehension. *CALICO Journal*, *36*(3), 204–224. https://doi.org/10.1558/cj.36268

Webb, S. (2011). Selecting Television Programs for Language Learning: Investigating Television Programs from the Same Genre. International Journal Of English Studies, 11(1), 117. https://doi.org/10.6018/ijes/2011/1/137131

Williams, N., & Thomas, E. (2017). Exploring minority language input sources as means of supporting the early development of second language vocabulary and grammar. *Applied Psycholinguistics,* 38(4), 855-880. doi:10.1017/s0142716416000473

Wilson, G., Nash, M., & Earl, G. (2010). Supporting students with language learning difficulties in secondary schools through collaboration: The use of concept maps to investigate the impact on teachers' knowledge of vocabulary teaching. *Child Language Teaching And Therapy*, 26(2), 163-179. https://doi.org/10.1177/0265659010368749

Wright, J., Huston, A., Murphy, K., St. Peters, M., PiA+-on, M., Scantlin, R., & Kotler, J. (2001). The Relations of Early Television Viewing to School Readiness and Vocabulary of Children from Low-Income Families: The Early Window Project. Child Development, 72(5), 1347-1366. https://doi.org/10.1111/1467-8624.t01-1-00352

Yang-Huang, J., van Grieken, A., Moll, H., Jaddoe, V., Wijtzes, A., & Raat, H. (2017). Socioeconomic differences in children's television viewing trajectory: A population-based prospective cohort study. *PLoS ONE*, 12(12), e0188363. https://doi.org/10.1371/journal.pone.0188363

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