TEACHERS' AND PARENTS' PERSPECTIVES ON THE ROLE OF "SCREEN TIME" FOR SCHOOL READINESS

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To the Dean of the Graduate School:

I am submitting herewith a dissertation written by Sheryl Alden entitled "Teachers' and Parents' Perspectives on the Role of "Screen Time" for School Readiness." I have examined this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy with a major in Child Development.

Katherine Kensinger Rose, Ph.D., Major Professor

We have read this dissertation and recommend its acceptance:

Department Chair

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ABSTRACT

SHERYL ALDEN

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Research exists concerning school readiness, teachers' perspectives about school readiness, parents' perspectives about school readiness, and the role of screen time on school readiness. However, there is a gap in the literature regarding teachers' and parents' perspectives on the role "screen time" plays in this readiness process. This study investigated these issues in an effort to shed light on how teachers and parents define school readiness and the role they feel "screen time" serves in the effort to prepare children for formal schooling. Findings and conclusions in this study may inform educators about the different types of "screen time" parents and teachers use to prepare children for kindergarten, as well as the perspectives of parents and teachers as to its effectiveness in that regard.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

Extensive research has been conducted investigating the skills and abilities children need to possess in order to prepare for formal schooling—a phenomenon commonly referred to as *school readiness* (Mashburn & Pianta, 2006; Lapointe, Ford, & Zombro, 2007). Mashburn and Pianta (2006) defined school readiness as "a function of an organized system of interactions and transactions among people (children, teachers, parents, and other caregivers), settings (home, school, and child care), and institutions (communities, neighborhoods and governments)" (p.151). Important skills identified in the literature for success in school environments include both cognitive and socio-emotional competencies (Fantuzzo & McWayne, 2002; Mashburn & Pianta, 2006, Pyle, Bates, Greif, & Furlong, 2005). Numerous studies have identified factors that influence this readiness for entry into formal school situations. Some of these factors include cognitive and socioemotional skills and abilities (Lapointe, Ford, & Zombro, 2007; Hair, Halle, Terry-Humen, Lovelle, & Calkins, 2006), health and family factors (Janus & Duku, 2007; Shonkoff & Philips, 2000), and physical and language skills (Pyle, Bates, Greif, & Furlong, 2005; Fantuzzo, Bulotsky-Shearer, Fusco, & Wayne, 2005). In this manuscript research is presented along with teacher and parent perspectives of school

readiness. Additionally, the role screen time plays in this complex interplay between children and their environments will also be explored.

Examining the role "screen time" plays in preparing students to learn in formal school environments is a relatively new area of exploration. Since the introduction of personal computers into homes in late 1977 and increasing since the 1980's (Home Computer Museum, 2009) many homes have one or more computers and virtually all schools in the United States have at least one computer in the classroom (Linebarger & Chermm, 2003). It is common for schools to have one or more computer lab for student use as well. According to the 2010 U.S. Census, 81% of American households own a computer (U.S. Department of Commerce [USDC], 2011). This figure is up from 42% in 1998, and 8% in 1984. In 2010, 82% of all U.S. households had internet access, up from 26% in 1998 (USDC, 2011). According to the 2010 U.S. Census, 58% of children ages 3-5 years of age live in household with a computer present (USDC, 2011). With this increase in computer ownership, young children have an increasing amount of exposure to this technology, whether through direct participation or simple observation of use by others.

The Kaiser Family Foundation (2005) conducted two major studies with American students confirming that kids grow up literally surrounded by media on a daily basis. American children spend 6.5 hours per day using media, none of which occurred in school. Interestingly, the study found that most kids also still read for fun, using new

media to supplement rather than replace other, more traditional media. About a quarter of the sample reported using two types of media simultaneously, such as listening to music while working on the computer or reading a magazine while watching TV (Kaiser Family Foundation, 2005).

In addition to computers and computer software for use with children, many new video and audio technologies have been developed with babies and children as their target audience. While the use of television to assist in educating young children has been in practice since the 1960s through programs like *Sesame Street* and *Mr. Roger's Neighborhood,* children in the new millennium are exposed to a broader array of programming options. There are many channels that are directed toward children. Nickelodeon offers children's program 24 hours per day. Their programming includes educational shows like *Dora the Explorer* and *Blue's Clues,* as well as non-educational shows like *Hannah Montana* and *ICarly*. The Cartoon Network offers cartoons all day long, most of which are intended more for entertainment purposes than educational ones. The program line-up of the Public Broadcasting System (PBS) is geared to educational programming and programming that teaches children life lessons. Some of their programming includes shows like *Clifford the Big Red Dog, Betsy's Kindergarten Adventures*, and *Reading Rainbow*, as well as classic educational programming such as *Sesame Street*. These programs are available for viewers from 6 am to 5 pm (pbs.org, 2009).

For children not exposed to children's programming on cable and free access television channels, videos and other technological toys are marketed as educational activities for children, some of which include *Baby Einstein* and *LeapFrog.* The *Baby Einstein* line of video products was developed in 1997 by Julie Clark, a mother who wanted to create products that would allow her and her daughter to experience the world together. These videos offer visual and auditory stimulation via a video, DVD, or audio CD for use with babies from birth through age five. *Baby Einstein* videos were the top selling videos in 2005. By the end of 2005, *Baby Einstein* was available in 30 countries and offered products in 25 different languages. Even though *Baby Einstein* is a very popular product in 2008, lawyers threatened a class-action lawsuit for unfair and deceptive practices unless Disney agreed to refund the full purchase price to all who bought the videos since 2004 (Lewin, 2009). *Baby Einstein* marketing is based on the claims that their videos are educational and beneficial for early childhood development. The lawyers called these claims false based on research findings indicating that television viewing may be potentially harmful for very young children. As a result, the *Baby Einstein* Company offered refunds of $15.99 each for up to four *Baby Einstein* DVDs per household bought between June 5, 2004, and September 5, 2009 upon return to the company (Lewin, 2009).

LeapFrog is another company that has developed many technological products designed to help children gain skills and knowledge needed for success in formal

schooling. The company was developed in 1995 by Michael Wood, a father who felt there were no products available to help his son learn to read (LeapFrog Enterprises, Inc., 2009). *LeapFrog* offers many technology-based learning products for children from infancy through grade school. By 2002, *LeapFrog* was the third largest company in the United States in the toy industry (LeapFrog Enterprises, Inc., 2009). Their sales grew seven percent from 2007 to 2008 ending the year at $459 million. Additional products focused on preparing children for success in school have been developed throughout recent decades. With the prevalence of television, video, DVD, technological-based toys, websites, and software geared at young children, it becomes important to understand the amount of exposure children have to these activities, how these activities may influence development, how parents and teachers use these technologies with children, and how parents and teachers perceive these technologies in terms of their usefulness for helping foster children's development in multiple domains.

In 2000, a report published by the Alliance for Childhood (Cordes & Miller, 2000) entitled, *Fool's Gold: A Critical Look at Computers in Childhood* argued that technology is physically, socially, and intellectually detrimental to children. This report asserted that children should not be hurried in their development and argued that what is appropriate for adults may not be appropriate for children. Cordes and Miller (2000) argued that the reduction of human interaction as a result of more interaction with technology may adversely impact children's social and emotional development, as well

as their language development. In response to *Fool's Gold*, Celements and Sarama (2003) contended conversely that it is not appropriate to lump all kinds of computer use together. These authors argue that drill and practice, developmentally appropriate software, educational games, and drawing games should be addressed separately because their impact on children may be different than other types of computer activities and games.

In the early years of computers, educators expressed concern that children in the pre-kindergarten years were too young to benefit from their use if they could operate them at all, much like the views expressed decades later by Cordes and Miller (2000). Research published at that time suggested that children only be introduced to technology "when they can type" (p.91) and thus many schools placed their computers solely in classrooms serving grades four and up (Frazel, 2007).

With continuing advances in technology and the curiosity expressed by children about computers and their uses, the educational software market shifted in the 1990s from solely focusing on schools to developing software and games to be used in children's homes. Currently, on a typical day, many children under age 6 watch television, play video games, and about 27 percent spend an average of fifty minutes using a computer (Vandemater, 2007). According to the American Academy of Pediatrics (1999), children under the age of 2 should not watch television and should be encouraged to participate in

more interactive activities that will promote brain development, such as talking, playing, singing, and reading together. The committee also recommended that total media time should be no more than one to two hours of quality programming per day for children older than two years.

When used appropriately; however many researchers believe that technology can be a valuable learning tool for preschoolers. In one trial designed to study the effect of computer use on a class of Head Start students, children spent fifteen to twenty minutes with developmentally appropriate educational software. Results indicated a positive relationship between the preschoolers' computer use and their performance on school readiness and cognitive tests (Li, Atkins, & Stanton, 2006), a finding in direct contradiction to the arguments of Cordes and Miller (2000).

Due to these contradictory views on the influences of children's use of technology, many researchers have sought to further investigate this issue. While investigating the influence of educational software on language use of preschoolers, Feng and Benson (2007) found "significantly greater developmental gains" in skills and knowledge of three- and four-year-old children using computers regularly in the classroom compared to children without computer experiences in similar classrooms (p.341). These authors concluded that developmentally adapted software and appropriate adult interaction can substantially increase the value of computer use of two- and three -

year olds. These authors' concluded that toddlers show "significant levels of independent interaction" and "the beginnings of self-directed learning," as well as positive attitudes toward computing and increases in focused time with increased exposure to developmentally appropriate computer experiences (Ellis & Blashki, 2004, p. 91).

While many parents may assume that technology benefits children with reading, writing, and arithmetic, many readiness experts highlight the importance of children's social and emotional development in regard to their readiness to succeed in formal school environments. Pianta (2002) describes a ready child as one who communicates well; follows directions and cooperates, is attentive, enthusiastic, and actively involved in classroom activities, and can ask for help when needed. Understanding how parents and teachers use technology in settings with children is vital to understanding how the social aspects of technology use may be influencing children's development.

Surprisingly, there is relatively little research on the perspectives of parents and teachers about school readiness and there is even less evidence in the literature on the perspectives of parents and teachers on the role of technology in preparing children for formal schooling. Some literature suggests that parents want to have their children follow the teacher's instructions as well as interact with their teachers (McBryde, Ziviani, & Cuskelly, 2004), while other research suggests that teachers want children entering their classroom to be able to express themselves as well as have social skills to help them adjust to life in the classroom (Fantuzzo & McWayne, 2002). The perspectives of use of

technology in the classroom and in the home have not been explored. With the dramatic increase in technology use, it is imperative that researchers understand how parents and teachers view the usefulness of technological methods of fostering children's learning and growth.

In this study, the primary interest of the researcher was to discover the types of screen time used to assist children in the development of school readiness skills as well as to find out teachers' and parents' perspectives of the role of screen time in preparing children for school entry. Findings in this study may inform educators about the different types of screen time parents and teachers use to prepare children for kindergarten and the perspectives of parents and teachers as it is usefulness in that regard.

Rationale of Study

A quantitative research design was used for this investigation. The primary interest of the researcher was to examine the perspectives of teachers and parents on the role of "screen time" in aiding children develop school readiness in preschools and at home. The researcher also investigated the types of "screen time" teachers are using in the classrooms, as well as what types of screen time parents are using in their homes. The researcher gathered data using an online survey. The purpose of the survey was to document the type of "screen time" being used in the home and classroom as well as to document teacher and parent perspectives on the role of "screen time" in preparing children for school entry.

Research Questions

For fulfilling the purpose of this study, the following research questions were explored:

1. What are parents' and teachers' perspectives of school readiness?
2. Are the roles of the adult (parent, teacher) associated with their perspectives of school readiness?
3. What are parents' and teachers' perspectives of the role of "screen time" on school readiness?
4. Are there differences between parents and teachers in their perspectives of the role of "screen time" on school readiness?
5. How much time is spent at home and in classrooms using "screen time" technology?
6. Are there demographic differences in the amount of time children spend using "screen time" at home and in classrooms?
7. How much time do parents and teachers spend interacting with children using "screen time" technology?
8. Are there demographic differences in the amount of time parents and teachers spend interacting with children using "screen time" technology?
9. What types of screen time are teachers and parents using in environments for young children (home, classroom)?

10. Are there associations between the adult role and the types of "screen time" used in different settings (home, classroom)?
11. What are teachers' and parents' perspectives of the purpose of "screen time" being used in environments for young children?
12. Is adult role associated with perspectives of the purpose of "screen time" being used in environments for young children?

Theoretical Perspective

Of the many theories about child development and education, three theories were chosen to guide the current study. The theoretical perspectives that guided this study included Urie Bronfenbrenner's (2005) ecological perspective for understanding human development, Jean Piaget's cognitive development theory (1952), and Lev Vygotsky's language development theory (1978). Bronfenbrenner identified a nested structure of environmental systems which are influential to the development of a child. The microsystem encompasses the most immediate relationships and settings in which a child operates (e.g., family, child, care, school). In the microsystem, an individual constructs the settings and are not passive learners. Bronfenbrenner's second system, the mesosystem, consists of relationships and interactions between those of the microsystems (e.g., interactions between family and school) as well as the relation of family experiences to school experiences. The ecosystem is an extension of the mesosystem, consisting of formal and informal social structures at the local level that influence the

child directly or indirectly (e.g., local government agencies, parent' work environment). The ecosystem is also where an individual experiences in a social setting is in which an individual does not have an active role but which never the less influences experience in an immediate context. The macrosystem consists of the larger society's values and beliefs, institutional patterns, and policies; the chronosystem is the patterning of environmental events and transitions over the life (Bronfenbrenner, 2005).

As children age, they may react differently to environmental changes and may be more capable to determine how that change will influence them. According to Bronfenbrenner, understanding these environmental systems, and the interaction within and between them, is vital to understanding human behavior and development. A child's development is determined by what he/she experiences in the settings he/she spends time in. Relationships have impact in two directions- both away from the child and toward the child. Bronfenbrenner calls these bi-directional influences (Addison, 1992). In the current study, Bronfenbrenner's theory was used to focus on the micro and meso level interactions within the child's environment. The researcher focused on the parents' and teachers' perspectives on their interactions with their children and the influence on "screen time" on those interactions.

Jean Piaget (1952) theorized that children are innately motivated, active learners, familiarizing themselves with the world long before researchers ever realized. He posited that children construct knowledge independently through their experiences with the

world. Teaching methods with a Piagetian perspective have resulted in the belief that children need direct experiences and active involvement in their world through exploration and play. Three of Piaget's assumptions used in focusing on how parents' and teachers' use technology at home and in the classroom are: children construct their own knowledge in response to their experiences, children learn many things on their own without the intervention of older children or adults, and children are intrinsically motivated to learn and without rewards from adults to motivate learning (Piaget, 1952). Using Piaget's cognitive development theory, the researcher focused on parents' and teachers' perspectives on how children construct their own knowledge with the use of technology. In addition, a Piagetian perspective was used to focus on parents' and teachers' perspectives on children's active involvement with the use of "screen time" to explore their school environment.

Lev Vygotsky (1978) investigated child development and how this was influenced by culture. Vygotsky's major themes used in developing this study were: social interaction plays a fundamental role in the process of cognitive development, the more knowledgeable other and the zone of proximal development. According to Vygotsky, every function in the child's cultural development appears twice: on the social level and on the individual level (Crawford, 1996). The More Knowledgeable Other (MKO) refers to anyone who has a better understanding of or a higher ability level than the learner, with respect to a particular task, process, or concept. The MKO is normally thought of as

a teacher, coach, or older adult, but can also be a peer, a younger person, or even a computer (Crawford, 1996). The zone of proximal development (ZPD) is Vygotsky's term for the range of tasks that are too difficult for the child to master alone but that can be learned with guidance and assistance of adults or more-skilled children. The lower limit of ZPD is the level of skill reached by the child working independently. The upper limit is the level of additional responsibility the child can accept with the assistance of an able instructor. The ZPD captures the child's cognitive skills that are in the process of maturing and can be accomplished only with the assistance of a more-skilled person (Vygotsky, 1978). His most important contribution is the inter-relationship of language and thought. With the use of zone of proximal development the researcher focused on parents' and teachers' perspectives on their interaction with the students and how "screen time" helps children prepare for formal schooling. The researcher also focused on how the children interact with each other and adults using "screen time" in the classroom.

Definition of Terms

Preschool: Public or private educational setting that provides care for children age 2 ½ to 5 years with the purpose of play, socialization, and cognitive development (Morrison, 1997).

Preschool children: Children age three to five years.

School Readiness: The condition of children when they enter school based on the five domains of development: Health and physical development, social and emotional development, approaches to learning, language development and communication, and cognition and general knowledge

Technology: Material objects used by humans; examples include TV, computers, videos, cds, DVDs.

Screen Time: Amount of time individuals spends in front of screens; examples include TV, computers, cell phones, videos/DVDs.

Situated meaning: Meaning that individuals can apply in actual contexts of use for action and problem solving (Gee, 2004).

Delimitations

Several factors delimitated this study and affected the ability to generalize from the result of this study to others. These factors were:

1. The participants were parents of preschoolers and preschool, kindergarten, and first grade teachers from elementary schools and child care centers located across the State of Texas.

2. The researcher used only English classroom teachers

3. The data was collected using only English language survey.

Summary

This chapter introduced a quantitative study of the perspectives of teachers and parents on the role of "screen time" in the classroom and at home to prepare children for school entry. Bronfenbrenner's Ecological Theory, Piaget's Cognitive Development Theory, and Vygotsky's Language Development Theory were used to conceptualize the analysis and exploration of the study. The perspectives of teachers and parents, and the use of "screen time" in the classroom and at home to help with school readiness were explored.

CHAPTER II

REVIEW OF LITERATURE

School Readiness

The National Association for the Education of Young Children (NAEYC, 1990) "believes that a commitment to promoting universal school readiness requires (1) addressing the inequities in early life experience so that all children have access to the opportunities that promote school success; (2) recognizing and supporting individual differences among children including linguistic and cultural differences; and (3) establishing reasonable and appropriate expectations of children's capabilities upon school entry" (p.1). Through research we can determine what skills are needed for children entering formal schooling to ensure them a successful educational experience.

In one such study examining contextual influences on school readiness, Janus and Duku (2007) investigated the influence of socioeconomic, family, and health factors on school readiness. They found that children's school readiness is sensitive to socioeconomic (SES), demographic, and family factors (Janus & Duku, 2007). The data was collected from the Community Component of the National Longitudinal Study of Children and Youth. Participants came from six communities in Canada. Researchers ended up collecting information from 2,196 children. Additional data was collected from

the Person Most Knowledgeable (PMK), which in most cases was the mother of the selected child, through an interview. Results of this study revealed higher scores in five domains (physical and well-being, social knowledge and competence, emotional maturity, language and cognitive development, and communication skills and general knowledge), when family income was higher, when the parents' health was better, and when there were two parents in the household. It was found that the more siblings in the family, the lower the child's scores in language and communication domains, although they were higher in emotional maturity.

In addition, it was also found that income was a more powerful contributor to children's vulnerability at school entry than parent education (Janus & Duku, 2007) a finding in contradiction to other literature that suggests that maternal education accounts for more variation in children's outcomes than income (Shonkoff & Philips, 2000). Shonkoff and Philips (2000) explained that SES impacts child development through interactions with parents and resources available to children. Since many educated women may not earn an income that reflects their education within the first few years of their child's life, well-educated mothers may be more likely to utilize appropriate parenting strategies, provide high quality nutritional food choices, and promote more positive activity choices, regardless of their income level, than mothers who are less educated. Janus and Duku (2007) concluded that it is possible that the inequalities between education and income levels may not be large enough to result in unique

contributions. In summary, the results of this study revealed that higher income was a more powerful predictor of children's outcomes in regard to school readiness than parental education. From these results, it is clear that school readiness is multifaceted and many different variables affect children's preparation for school.

Another study examining children's school readiness related to predictors of academic, health, and social outcomes in the first grade and was conducted by Hair, Halle, Terry-Humen, Lovelle, and Calkins (2006). Through cluster analysis, these authors identified four distinct profiles representing school readiness profiles. The authors identified these groups of children as ones who had strengths in all dimensions of school readiness, as well as another group of children with strengths in health and social/emotional development, but with weaker language and cognition skills at the start of kindergarten. They also found that children from intact families with higher incomes were more likely to have strengths in all dimensions of school readiness, whereas children from more disadvantaged backgrounds, such as those born at a low birth weight or to a teenage mother, were more likely to be at risk in some developmental domains at school entry (Hair et al., 2006). In the above research studies, the variables that were found to influence school readiness were family income, family health factors (child and parent), and the mother's education. Since these factors were found to have an impact on a child's school success, these factors need further investigation to produce results that

may inform policies that can be implemented to help children prepare for school readiness.

In addition to the above study, Howes, Burchinal, Pianta, Bryant, Early, Clifford, and Barbarin (2008) examined children's growth in school-related learning and social skills over the course of the pre-kindergarten year. The researchers found that children's gains could be attributed to classroom instructional climate, to teacher-child relationships, and to the amount of exposure to certain areas of instruction. It was found that children in higher instructional climate classrooms experienced teachers who engaged them in interactions that encouraged communication and reasoning while being sensitive and responsive in her/his interactions with children, and teachers who constructed an atmosphere of respect, encouragement, and enthusiasm for learning. The researchers also found evidence for a match between exposure to instructional activities and children's pre-literacy skill development. Howes et al. (2008) explored children's growth in language, literacy, and math in pre-K programs; however, these authors did not explore the teachers or parents perspectives of these gains at home and in the classroom, or how being exposed to instruction through screen time might contribute to these gains. Future research should explore these aspects of school readiness.

With the purpose in mind of exploring play interactions with peers in the family context for low-income preschool children, Fantuzzo and Wayne (2002) examined the relationships between parental reports of children's peer play at home and indicators of

children's school readiness using families and teachers of 242 preschool children enrolled in a large central city Head Start program. The children ranged in age from three years to five years. The researchers found that children who exhibited interactive play with peers at home, such as directing play activity and helping other children settle conflicts, received high ratings of collaborative play by their classroom teachers (Fantuzzo & Wayne, 2002). The same children were reported as having positive approaches to learning, such as the ability to manage frustration, cooperate in learning groups, and the willingness to ask for and accept help. Fantuzzo and Wayne (2002) also found that interactive play was associated with teacher reports of children's motivation to learn and classroom observation of children's autonomous behavior (e.g., initiation of tasks, independent exploration). The authors also found that children who showed evidence of disruptive peer-play experiences at home and in the neighborhood were disruptive in the classroom with peers and during the learning process (Fantuzzo & Wayne, 2002). Children rated by parents as disruptive during play at home exhibited tendencies to start arguments or fights, to become physically aggressive, or to verbally offend others during play at school. In addition, these children had difficultly modulating their emotions. Teachers' and parents' perspectives of the peer-play interactions of the children were explored in this study, but it would be beneficial to see what their perspectives would be about using technology in the home or classroom to assist these children with peer-play activities.

Similarly, Fantuzzo, Bulotsky-Shearer, Fusco, and Wayne (2005) examined preschool classroom behavioral adjustment and social-emotional school readiness. The authors used 210 children ranging in age from three to six years, drawn from a large, urban Head Start program. They found that socially negative behavior early in the school year accounted for a significant amount of variance in emotion disregulation at the end of the year. Children who showed inattentive and oppositional behavior demonstrated greater levels of unpredictable and negative emotion in the classroom. While others who showed early withdrawn and socially reserved behavior demonstrated less adaptive emotional regulation and affective engagement in the classroom at the end of the year (Fantuzzo et al., 2005). Children who demonstrated socially and academically disruptive behavior early in the year demonstrated lower levels of cooperative, engaged, and attentive learning behaviors in the classroom. Aggressive behavior was associated with lower competence, motivation, and attitudes toward learning (Fantuzzo et al., 2005).

Screen Time and Its Influence on Development

In the United States, computer users under the age of six owned an average of six software titles in 1996, a number that has increased each year. Eighty percent of people who plan to buy a computer most often cite children's education as the main reason. In her book, *Failure to Connect: How Computers Affect Our Children's Mind-For Better or Worse*, Jane Healy (1998) writes that time spent on the computer during the early years may be harmful to normal development and learning. She identifies seven types of

learning that maybe distorted by too much electronic stimulation: learning in context, learning to use all the senses, learning to be powerful learners, learning to pay close attention and focus on learning materials, learning visual imagery and memory, learning to think logically, and learning new symbols. According to Healy, human interaction and environment is more important than interaction with a machine. Children cannot control the computer's behavior like they can control their other play materials. Skills learned during this type of learning include the ability to regulate one's own emotions, problem-solving skills, attention, social skills, and originality (Healy, 1998). Healy writes that children need to learn to use their imagination; a computer provides too much information and does not encourage children to use their memory to visualize things. She suggests that age six to seven is a "realistic stepping-stone into constructive computer use" (p. 218). Healy does not recommend putting younger children on the computer, and in fact, she says that computer use at a younger age can be damaging to the development of the child.

Likewise, Todd Oppenheimer (2003), author of the book, *The Flickering Mind: The False Promise of Technology in the Classroom and How Learning Can Be Saved*, writes that computer in the classroom should be limited and carefully controlled. Oppenheimer believes that computers should be used in shop classes, where older students can take computers apart and learn how modern electronics and digital programming actually operate. He also indicates that computers should be used as a

supplement and not as a replacement for traditional studies. However, he does specify that no student should graduate from high school without some basic understanding of current software programs and the principles of digital technology.

Oppenheimer's (2003) recommendations have some support in empirical literature. In a study conducted in 2009, by Zhou, Lozano, and Christakis (2010), 329 children and their parents were fitted with digital devices that randomly recorded everything they heard or said for 12 to 16 hours at a time. Children who were exposed to more TV heard 7 percent fewer words from adults and spoke fewer words themselves. The researchers' conclusion was that screen time cut into the adult-child interaction that is crucial to developing language skills.

Some research suggests that the use of "screen time" technology may be linked to the risk of obesity, seizures, and hand injuries. Watching television and using a computer are believed to be one important factor contributing to the fact that 25% of children in the United States are overweight or obese (Hill, 1998). Children develop lifelong eating habits as preschoolers, and the United States Department of Agriculture tells families that children may be influenced by TV commercials for food as early as four years of age (USDA, 2001). The abundance of childhood obesity is not from only watching too much television, but the fact that commercials influence children to ask for junk food.

There are additional risks to too much screen time exposure for children. A research team in 1994 reviewed 35 reported cases of video game-related seizures and

found that abstinence from video games was the preferred treatment, compared to anticonvulsant medication (Graf, Chatrian, Glass, et al., 1994). The flicker frequencies or quickly moving images, in some video games can trigger seizures in patients with photosensitive epilepsy, a form of epilepsy in which seizures are triggered by visual stimuli that form patterns in time or space, such as flashing lights, bold, regular patterns, or regular moving patterns (Epilepsy Foundation, 1998) . Excessive video game playing also has been associated with a form of tendinitis, called Nintendinitis, characterized by severe pain in the extensor tendon of the right thumb as a result of the repeated pressing of buttons during game playing (Brasington, 1990).

In his book, *What Video Games Have to Teach Us about Learning and Literacy*, James Gee (2003) writes when people learn to play video games, they are learning a new literacy. There are many different methods of reading and writing. Gee writes that individuals do not read or write newspapers, legal facts, essays in literacy criticism, poetry, rap songs, or through an endless list in the same way. Video games are a new form of art. He also writes that video games are at the new beginning of their potential.. Eventually some form of conversation between real people and computer created characters will occur alongside the conversations among people in their virtual and real identities that already take place in Internet gaming (Gee, 2003). A player learns to think critically about the simulation while at the same time gaining embodied knowledge

through interacting with it, taking on a new identifies with in it, solve problems through trial and error with it, and gaining expertise, or literacy within it (Gee, 2003).

According to Gee (2004), a good deal of school success is based on understanding complex academic language. People acquire situated meanings for words only when they have experienced the images and actions to which the words apply (Gee, 2004). Since video games are action and goal directed preparations for embodied experience, they allow language to be put into the context of dialogue, experience, images, and actions (Gee, 2004). This allows language to be situated.

Furthermore, computers and the Internet are used by children for schoolwork and to obtain information. Research on the effects of computer use on cognitive skills has focused on the development of a specific set of visual intelligence skills crucial to the use of computer technology; spatial skills, image representation skills, and visual attention skills. A longitudinal study conducted by Rocheleau in 1995, tracked a group of students from seventh through twelfth grade, and found that the students with computers at home had higher overall grades and, especially in math and English, than those without home computers. Students who reported using their home computers for at least 10 hours during the school year for activities not related to a class also reported better overall grades, better grades in math and English, and performed better on a test of scientific knowledge than those who reported using their home computer less (Rocheleau, 1995).

Moreover, the use of home computers not only influence children's cognitive and academic skills, but also shapes children's social interactions and development. One survey found that among junior high and high school students, more than 60% of all their computer time is spent alone (Roberts, Foehr, Rideout, et al., 1999). However, much of that time is actually spent extending social relationships by connecting with other through communicating via the Internet. One-fifth of all children between ages 8 and 18 reported having a computer in their bedrooms; researchers suggested that this may be robbing children of time for other social activities and interfering with the development and maintenance of friendships (Roberts, Foehr, Rideout, et al., 1999). In another study, researchers conducted an in-depth analysis of the effects of acquiring access to the Internet among a group of 93 families. The study found that 10 to 19 year olds were especially likely to report using the Internet for social purposes. Teens reported using the Internet for communicating with friends, meeting new people, getting personal help, and joining groups. The teens told the researchers that keeping up with both local and distant friends were an important use of the Internet for them, and they often used the Internet for communications involving small talk, gossip, and news of the day (Kraut, Scherlis, Mukhopadhyay, et al., 1998).

Not only is there concern about the use of computers influencing children's language, cognitive, physical, and social development, there is also concern about the role video games play in the development of violent behavior. One study of third and

fourth graders found that those who played a violent video game, such as Mortal Kombat responded more violently to three of six open-ended questions than did children who played a nonviolent computer game, such as basketball.

In her book, *Into the Minds of Babies: How Screen Time Affects Children from Birth to Age Five,* Lisa Guernsey (2007) interviewed parents about the screen time to which their children were exposed. She found that parents reported it easier to follow the American Association of Pediatrics recommendations that children over two be limited to two hours of screen media per day than the recommendation of no screen time for children under two. Parents she interviewed were very conscious of the wide range of media and the growth of digital media available for children. They were careful about where they put the television, conscientiously let other caregivers and babysitters know about their media rules, and tried to engage their children in a variety of media. Guernsey (2007) writes that videos themselves do not damage a child's brain, but screen time can take away from the face-to-face interactions babies need to build brain connections. When there is background noise, infants have a much harder time picking up on the conversations going on around them, so it is harder for them to learn words. Guernsey also writes that media changes how babies play. Instead of lingering for several minutes with a toy, they will spend just one minute with it.

In contrast, Yelland (2007) writes that the old basics of reading, writing, and arithmetic were taught and practiced until mastery was demonstrated in more examples is

not efficient. He writes that there is a new recognition that an educated population is one that needs to show the capacity to be innovative and creative, as well as being able to work collaboratively, and flexibly on authentic tasks that have been generated by the students themselves, as well as by teachers. This naturally involves the use of information and communication technologies (ICT), which are integral to functioning in every aspect of the 21st century (Yelland, 2007).

Screen Time and Its Influence on School Readiness

While the literature is not as prevalent as that related to school readiness or the prevalence of technology in children's lives, some studies have investigated the influence of technological tools used by children in relation to their readiness for formal schooling. One such study explored the relationship between frequency of participation in play activities and kindergarten readiness. Using 71 children ranging in age from 4.5 to 6 years of age, Long, Berreron, Doyle, & Gordon (2005) found that the two play activities that children engaged in most often were reading books and watching television. Playing video games and riding bikes were among the activities that children participated in the least. Ratings of children's kindergarten readiness levels of *below average* to *very poor* accounted for 41.5% with the majority falling in the below average to poor rating (Long et al., 2005). The contributing factor could be that 14 of the 41 participants watched 12 hours or more of televisions per week. No students scored in the *superior* or *very superior* range. These studies show the importance of the micro- and meso- levels of

interaction for the children as well as showing the importance of play activities in preschool for kindergarten readiness. Surprisingly, the play activities children participated in the most were reading books and watching television rather than playing video games or engaging in physical activities like riding their bikes. Future research should continue to explore the difference in the leisure play activities in which preschool children engage.

Additionally, a statistically significant difference was found between males and females in the frequency of their participation in fine motor activities, with females in this study engaging in more fine motor activities than males (Long et al., 2005). No significant difference in gross motor activities was found. Play activities like coloring, playing with puzzles, and building with blocks were found to have significant, moderately strong relationships with the language subsections of plurals. During play with these activities, children frequently described the pictures, referred to the number of pieces or blocks they were using, or sorted according to "mine" or "yours" suggesting the understanding of plurals (Long et al., 2005). Most salient to this literature review, the results of this study also demonstrated a moderately strong, significant, negative relationship between the frequency of participation in watching television and the performance on the subsections of color concepts and following directions (Long et al., 2005). Unfortunately, the researchers did not examine the specific content and purpose of the television programs viewed to know if the children were viewing programs designed

to be educational. This information would have strengthened the study's methodology and the information gained regarding the influence of screen time on children's readiness for formal school entry.

The role of technology in preparing children for formal schooling has contradictory views. Cordes and Miller (2000) argued that the introduction of computers in preparing children for school would be detrimental to their development. In contradiction to the above assertion, Clements and Sarama (2003) argued that drill and practice, developmentally appropriate software, educational games, and drawing games should be addressed separately because their impact on children may be different from other types of computer activities and games. In fact, one study investigating active peer interactions between 14 preschool children (Heft & Swaminanthan, 2002) found that children engaged in multiple social interactions with one another during computer usage in a classroom setting. These interactions included children observing and acknowledging each other, children commenting and being ignored by peers, and children sharing the computer or helping each other. Eighteen peer conflicts were also noted. The conflicts mostly occurred regarding turn-taking and sharing of the computer. Numerous teacher-child interactions were also recorded (Heft & Swaminanthan, 2002). The examples of teacher-child interaction included teachers talking about what the child was doing, teachers intervening in rough or disruptive computer play, and children asking for the teacher's help. The results revealed that children exhibited a large variety of social

interactions while at the computer with both peers and teachers. Likewise, in a study by Shahrimin and Butterworth (2002), similar positive and negative interaction patterns among peers playing at the computer were found. In this sample of six 5 year-old children, the interaction patterns noted included directing partner's actions, providing information, asking for information/explanation, self-monitoring/repetition, declarative planning, disagreeing with partner, and showing pleasure (Shahrimin & Butterworth, 2002). The authors concluded that even with little or no adult guidance, the children were able to interact in a variety of ways with peers while on the computer.

Furthermore, Haugland (2002) examined 49 children in four preschool classrooms to examine children's computer interaction. Treatment groups were divided among classrooms. One classroom contained computers with developmentally appropriate software and supplemental activities. Supplemental activities were placed on the table next to the computers and were designed to incorporate concepts learned on the computer into hands-on classroom activities. The second classroom contained developmentally appropriate software with no supplemental activities. The third treatment group had nondevelopmentally appropriate software. A control group with no computer access was also included. Children were assessed at pre- and post-test for intelligence, creativity, and self-esteem.

Significant differences on measures of intelligence were observed for children in the group with developmentally appropriate software and supplemental activities and the

group with developmentally appropriate software without supplemental activities (Haugland, 2002). Children in the developmentally appropriate with supplemental activities group scored significantly higher on six out of eight of the cognitive subtests at post-test. Children exposed to developmentally appropriate software without supplemental activities gained in cognitive skills on four out of eight of the cognitive subtests. Nondevelopmentally appropriate software was related to a gain only in the subtest of enhanced attention. Children in the control group exhibited no significant gains in cognitive development from the pre- to post-test period. The authors concluded that the developmental software may have allowed children to become more actively engaged in the experience and allowed children to have a degree of control over their environment, leading to greater gains in developmental assessments.

Additionally, parents of 128 elementary school children answered a survey about information on home Internet access and children's online activities. Johnson (2009) measured the relationship between online behavior and cognitive development. Approximately 83% of families reported home Internet access and of those, almost 90% indicated that children used the Internet at home (all the children used the Internet at school). Children whose parents reported online learning and communicating demonstrated better language and metacognition than children of parents who did not report such Internet behavior. In addition, children whose parents reported online playing and browsing were not cognitively different than children whose parents who did not

report such Internet behavior. He found that children who learned and communicated online (or who engaged in otherwise goal-directed and focused behavior) were cognitively more developed than children who played and browsed (Johnson, 2009).

In a similar study, two surveys highlighted the potential of home computing for supporting school achievement. Fairlie (2005) found that access to computers in the home increased the likelihood that children would graduate from high school, but also found that children of African- American or Latino descent were much less likely to have a computer at home than Caucasian children. Latino families were the least likely to own a computer. These findings are supported by those of Calvert, Rideout, Woolard, Barr, and Strouse (2005) who found that ethnicity, age, and socioeconomic status factors influenced computer access and use. Fairlie (2005) found no relationship between the frequency with which children played computer games in the home and the likelihood they could read; however, increased nongame computer use was associated with an increased likelihood that children could read.

In a study that examined the role of screen time in the home and its impact on reading and math achievement in the early grades, Espinosa, Laffey, Whittaker, and Sheng (2006) found that using a computer at home and using it with the Internet at kindergarten and third grade was positively correlated with reading achievement at each grade level respectively. Computer proficiency in kindergarten was significantly and positively related to final reading achievement. Using a computer at home and using it

with the Internet were positively correlated with math achievement at kindergarten and third grade. Computer proficiency in kindergarten was also significantly and positively related to final math achievement. As these results were derived from the nationally representative Early Childhood Longitudinal Study from the Kindergarten class of 1998-99, they paint a picture of how screen time may have influenced children in the U.S. at the dawn of the Internet and the World Wide Web as a common avenue for information acquisition.

In addition, Li and Atkins (2004) examined the association of home computer use with children's school readiness and psychomotor development. They found a significant association between computer access and children's performance on cognitive and psychomotor tests, after controlling for children's developmental stage and family socioeconomic status. Children who had access to a computer in the home environment performed significantly better in preschool concepts and cognitive skills than children who had less or no access to a computer.

Furthermore, Li, Atkins, and Stanton (2006) examined the impact of computer usage on school readiness and psychomotor skills with 122 Head Start children. Children with computer access at home and school scored significantly higher than those children with little or no computer access. Home computer access had a stronger impact on children's test performance than computer in school. The data from this study indicated

that even among children as young as preschoolers, the effect of computer usage at school is strongly enhanced by computer usage at home.

Existing literature suggests that computer usage impetuses to benefit children to learn language and develop metacognition skills (Fairlie, 2005). Computers contributed to increased test performance as well as psychomotor skills. Laffey, Whittaker, and Sheng (2006) found that the use of computers support children in develop reading skills as well as developing math skills. Johnson (2009) found that children whose parents reported online usage developed better language skills than children who did not. All of these studies show that computer usage can help children develop the skills they need for school.

Another study conducted by Ljung-Djarf (2008) examined computer use in three Swedish preschools with a specific focus on the preschool teacher's way of managing this use. The teacher's approach was determined by a combination of the teacher's assumptions about the possibilities of computer use and the dominant underlying principle or rationale at work in the preschool. The main purpose of having computers in preschool appears to be giving children something to do and encouraging them to take turns, and at the same time supervising the children to ensure they also do other things and not spend too much time at the computer.

In the above three studies (all examining computer usage in preschools), it was found that having computer access at home and school increased the scores of the

children within each of the studies. Children who had access at home performed better than children who did not have access at home. Concluding that having access to computers at home and school not only gives the children something new to explore, but helps them with increasing their scores and performing better on tests.

Moreover, Voogt and McKinney (2007) examined how technology can support the development of emergent reading and writing skills in four- to five-year-old children. The research was conducted with PictoPal. PictoPal is a software package that uses images and text in three main activity areas: reading, writing, and authentic applications. Learners were able to work independently with the program after some initial help. Kindergarteners possessed sufficient motor skills to use the mouse. Significant differences in learning effects were determined for the experimental versus the control group. After eight computer sessions with PictoPal, evidence was found to indicate that the PictoPal intervention improved emergent reading and writing skills. A few students from the control group gained as much as students in the experimental group, while others from the control group had a negative gain.

Furthermore, Dan and Calao (2001) examined whether preschool children using CAI (computer assisted instruction) programs on Playstation game consoles acquire spelling, reading, and basic mathematical/arithmetic skills better than children who do not have access to this technology. Forty-seven African-American preschool children, ages five and six years, from lower socio-economic backgrounds made up the sample.

Pre- and post-tests were carried out on both groups to assess the level of achievement. The duration of the intervention program was 11 weeks. The children played with the game for 40 minutes daily, 5 days per week, and for at least 30 minutes at home with their parents. The children of the control group attended the school's usual program without using the Playstation game. The results demonstrated that both groups improved in spelling and reading, but the progress for the experimental group was much greater than that of the control group. On the other hand, there was no difference on knowledge of arithmetic.

In another study examining the use of computer assisted intervention, Segers and Verheoven (2002) developed a child friendly CAI program to enhance the early literacy skills of preschoolers in Netherlands. The participants' average age was four years to five years. The training consisted of three 25- minute sessions for the first study and six 15-minute sessions for the second study over a three week period. Those children who scored high on their pre-tests also learned from the training. In the second study, the significant learning gains the students demonstrated were found to be visible one month after training.

In a similar study, Chera and Wood (2003) used CAI to promote phonological awareness in children beginning to read; the intervention group showed significantly higher increases in phonological awareness than the control group. There were no significant benefits observed for word reading. The intervention group received ten 10-

minute sessions with the program over four weeks, while the control group completed normal activities. The results suggested that the combination system of presenting both whole word and segment speech feedback simultaneously may not be very effective.

Finally, Acha (2009) investigated the effects of three different presentation modes in children's vocabulary learning with self-guided multimedia programs. Participants were 135 third and fourth grade children who read a short English language story presented by a computer program. The recall rate of children in the 'word-only' group was better than the recall rate of children in the 'word and picture' and the 'picture-only' groups. The difference occurred both in an immediate post-test and in a delayed post-test which took place two weeks later. Acha suggested that adding the picture to the word involves extra cognitive resources, as deduced by the better performance in the 'word-only' group than in the 'word and picture' group (p. 28).

The four above studies show that screen time can be a useful tool in developing the needed skills for children to prepare for formal schooling. Most schools, if not all, have access to computers. The use of computers in the classroom and at home; of educational television and videos in the classroom and at home, of educational software in the classroom and at home are all beneficial ways to assist children develop the skills needed to help them be successful in school. Screen time is forever changing and becoming more and more available to everyone. The above research studies all show the impact screen time can have on school readiness from increasing test scores to helping

children learn their alphabet, along with helping them develop the skills of sharing and taking turns with the computers. Along with understanding the use of technology in helping children become school ready, it is also important to understand teachers' and parents' perspectives about the use of technological tools in developing those skills and to find out what tools children are using at home. Finding out what tools they are using and what their thoughts are on tools being used or the tools needed to be implemented would benefit teachers, principals, administrators, and political figures develop programs that use technology to help enhance education and the needs of the future leaders.

Conclusions

The above research studies examine different factors that influence school readiness such as socioeconomic status, family structure, preschool classroom behavior, and the use of technology in preparing children for formal schooling. In order to gain knowledge about school readiness, the influences on that preparation need to be understood. The above studies help examine what research has shown to influence school readiness. Janus and Duku (2007) found readiness is sensitive to socioeconomics, demographics, and family factors which are a contradiction to Shonkoff and Philips (2000), who found maternal education to be more of a predictor than income. However, Hair et al. (2006) also found income to be a predictor of readiness in the first grade. Hair et al. (2006) found that children from families with higher incomes are more likely to have strengths in all dimensions of school readiness. Not only is it important to examine

the influences of school readiness, it is also important to examine the perspectives of school readiness that teachers hold.

Teacher's Perspectives of Children's School Readiness

While a great deal of research exists on school readiness and its influences, less information is available that sheds light on teachers' perspectives of children's school readiness. Although relatively limited, some research does exist on this topic as exemplified by a study conducted by Lin, Lawrence, and Gorrell (2003) examining kindergarten teachers' perspectives of children's readiness. Using data from the Early Childhood Longitudinal Study of the 1998-1999 school years, these authors used survey data from 3,305 kindergarten teachers. The key findings of this study revealed that kindergarten teachers tended to view preparing children to satisfy social demands of schooling as having a higher priority than academic skill development. Simplified, kindergarten teachers' primary concerns were about children's social behaviors in schools. Providing children with access to the interactive life of the classroom, to develop social skills, and to acquire appropriate forms of behavior in groups were valued goals to the kindergarten teachers (Lin et al., 2003). Eighty four percent of teachers expressed they wanted kids to be able to tell "wants and thoughts" (p. 233). Seventy nine percent wanted the children not to be disruptive. Seventy eight percent wanted children to follow directions, while seventy four percent wanted children to take turns and share (Lin et al., 2003).

There were differences among the kindergarten teachers as well. Interestingly, the authors found that geographic region, age, and gender were associated with readiness expectations of kindergarten teachers. For example, kindergarten teachers in the South showed higher social and academic expectations than kindergarten teachers from the West. Teachers from all regions viewed social and academic dimensions of kindergarten as being interdependent (Lin et al., 2003). Older teachers had lower expectations about kindergarten children's academic skills; they were significantly less likely to say that those skills were very important than younger teachers. While only 2% of the samples were male, leading the authors to caution too broad a generalization of these findings, female teachers in this study tended to express slightly higher expectations related to social skills than male teachers. While it appears from this nationally representative sample that social skills emerge as more important to kindergarten teachers when describing school readiness than academic skills, it did not explore what activities teachers felt were important for parents to encourage during the preschool years in fostering school readiness. Future research should explore these perspectives.

A similar study investigating teachers' perspectives of children's readiness for formal schooling was conducted by Wright, Diener, and Kay (2000). Through interviews with kindergarten teachers and principals in eleven inner city schools in the Salt Lake City School District, these authors found that the teachers varied in the skills they expected children to have. Some teachers (13%) expected children to have interest in and

familiarity with the alphabet. Others (13%) wanted children to know the alphabet and how to write the letters. Some (7%) thought children should have basic math skills such as the ability to recognize the numbers 1-10 and to count from 1 to 10 (Wright et al., 2000). However, most teachers did not emphasize being able to write numbers. Forty one percent of teachers stressed language skills as important for school success. Similar to the findings of Lin et al. (2003), teachers in this sample wanted children to be able to verbalize their needs, such as needing to use the restroom. Some teachers expressed a desire for children to develop fine motor skills, such using scissors to cut items.

Likewise to the teachers in Lin et al.'s (2003) study, a lack of social skills was emphasized by many of the teachers as precluding children from being ready for formal schooling (Wright et al., 2000). Twenty-seven percent of teachers noted that parents lack a sense of educational expectations from themselves and their children. The majority of teachers noted literacy as a prerequisite for school success. Most teachers emphasized that children needed literacy experiences, such as being read to every day (Wright, Diener, & Kay, 2000). Teachers in this study focused on the need for family literacy and helping families emphasize reading in the home. However, there was no mention of how reading programs using technology can help children develop those reading skills- a tool that may be used by a significant number of families in an effort to provide educational toys for their children, but may lack the interactive factors that seem to be influential to the benefits of shared storybook reading.

Hains, Fowler, Schwartz, Kottwitz, and Rosenroetter (1987) also investigated preschool and kindergarten teachers' expectations for school readiness. They surveyed 21 preschool teachers and 28 kindergarten teachers. Interestingly, at least 80% of the preschool teachers listed many more skills as "very important for kindergarten entry" than did 80% of the kindergarten teachers (p. 13). The kindergarten teachers' responses indicated that they expect to or are willing to teach nearly all basic skills during the kindergarten year. They expect that children will be able to perform a large number of skills, such as reading and writing, by exit from kindergarten. The preschool teachers' data most closely resembled the kindergarten teachers' responses for kindergarten exit. Importantly, during the time this article was being published, computers were not accessible to the general population, therefore, the exploration of teachers' perspectives on the role of technology, specifically computers, could not be explored. Advances in access to technology in recent decades calls for research on the role that technology may have in teachers' views on how to aid children develop school readiness skills.

Examining kindergarten teachers' perspectives in the above studies has led to the conclusions that kindergarten teachers are more concerned with preparing children for the social demands on formal schooling than the academic demands, as well as children being able to express themselves. Teachers did not rule out children being prepared academically- they did feel that being familiar with the alphabet (13%) was important. Interestingly, preschool teachers and kindergarten teachers differed in their opinions on

school readiness. Preschool teachers listed more skills as very important for kindergarten entry compared to kindergarten teachers. Kindergarten teachers expressed that they would be willing to teach the basic skills needed the first year. These facts indicate that teachers' perspectives of school readiness differ and should be explored in more depth. However, not only are teachers' perspectives on school readiness important to understand but parents' perspectives are also important to explore.

Parents' Perspectives of Children's School Readiness

Like research on teachers' perspectives of school readiness, there are relatively few studies on parents' perspectives of school readiness, however some do exist. In one such study, McAllister, Wilson, Green, and Baldwin (2005) explored the perspectives and experiences of low-income, predominately African American families regarding children's school readiness. In the interviews, the researcher used three themes to discuss: 1) parents' concerns regarding strengthening their children's social capacities and ensuring their emotional health in preparation for school entry, 2) parents' views of school environments as challenging and potentially threatening, and 3) the transition that parents themselves undergo in preparation for their children's school entry, including their own need for social and emotional support to allow them to adequately respond to their children's new challenges (McAllister et al., 2005). The parents agreed that cognitive and academic skills are important for success in school. However, they also believed that social skills and emotional readiness are equally critical. Numerous parents

questioned whether, and to what extent, the schools were ready for their children, their specific cultural backgrounds, and their individual needs. Parents also suggested that it is equally important that they be ready for school. Many parents wanted to teach their children specific skills and behaviors they hoped would ease the process of school entry. They also wanted to provide more general social and emotional support (McAllister et al., 2005). In this study, the authors reported what parents thought their children needed to prepare for school entry; however, the authors did not report specifically what social or cognitive skills parents thought their children needed to be ready for school.

In another study, data from the National Household Education Survey was used to investigate parents' concepts of kindergarten readiness (Diamond, Reagan, & Bandyk, 2000). The authors found that parents emphasized the importance of a variety of academic and behavioral skills for children entering kindergarten. On average, parents reported they provided their children with home-based learning opportunities several times a week. The activities included both reading with their children and watching educational television. The authors did not find a significant relationship between the frequency with which parents reported they read to their children or the amount of time their child watched educational television and their child's readiness for kindergarten (Diamond et al., 2000). Non-Caucasian parents were significantly more likely to report concerns about their child's readiness for kindergarten than were Caucasian parents. However, Caucasian parents were much more likely than the other parents to act on their

concerns by holding their child out of kindergarten for an additional year (Diamond et al., 2000). Educational television was mentioned by the parents as an activity used in the home to help prepare their children for kindergarten; however, the use of other types of technology were not explored. It may be important to investigate what other kinds of technology parents use or perceive as being important to help children prepare for kindergarten.

Furthermore, O'Donnell (2008) investigated parents' reports of school readiness of young children and found that 58% of children three to six years of age and not yet in kindergarten were attending preschool or a day care center in 2007. Parents were asked how important they thought it was to teach their children certain things to prepare them for kindergarten. Sixty two percent of children had parents who reported it was essential to teach their children about sharing, 56% had parents who reported it was essential to teach the alphabet, 54 % had parents who reported it was essential to teach numbers, 45% had parents who reported it was essential to teach them how to read, and 41% had parents who reported it was essential to show them how to hold a pencil (O'Donnell, 2008). Parents were asked about the frequency with which they or other family members read to the child in the past week. Fifty-five percent of children were read to everyday, 28 % were read to three or more times in a week, and 13 % were not read to at all in a week. On average, children who watched TV or videos during the week watched for 2.6 hours on a typical weekday, and children who watched TV or videos during the weekend

watched for 2.7 hours on a typical weekend day (O'Donnell, 2008). On average, children whose mothers were employed for 35 hours or more per week spent more time watching television or videos on a typical weekend day (3.0 hours) than children whose mothers were employed for less than 35 hours per week (2.5 hours) or were not in the labor force (2.4 hours). In this study, it was not indicated whether the television programs or videos watched were educational. With the prevalence of children engaged in television viewing each day, it is important to investigate what benefit (if any) parents perceive this may have for their child. Parents' perspectives on school readiness are important to explore because some parents do not enter their children into a preschool program before kindergarten, but choose to prepare them at home. It is significant in the exploration of school readiness and the influence of technology that parents' perspectives be included in the investigation. In the previously discussed studies, parents agreed that children need to be ready academically, but they also felt that social skills were just as important. Parents were also concerned with how their children would be welcomed at school, their cultural backgrounds, and their children's individual needs. Interestingly, parents in the aforementioned study used educational television and home-based preparation activities several times a week to help their children with school readiness skills. They read to them several times a week, helped them with their alphabet, and helped them understand social skills like sharing.

Parents' and Teachers' Perspectives on Children's School Readiness

While relatively little research exists on parents' and teachers' perspectives of school readiness, even less has compared parent and teacher perspectives on children's school readiness with one another. One study attempting to do so was conducted by Zhang, Sun, and Gai (2008). These authors investigated teachers' and parents' perspectives and found the most important characteristics based on parents' perspectives were for their children to be able to understand and follow instructions along with the ability to interact with teachers. Parents cited frustration tolerance, independence, sitting still, and interaction with teachers as the most important qualifications their children should possess (Zhang et al., 2008). Kindergarten teachers thought manipulation skills, self-control, moral awareness and compliance with authority was fundamental.

Another study by McBryde, Ziviani, and Cuskelly (2004) investigated the factors that influence the decision making of parents and teachers regarding a child's school readiness. Results indicated that parents and teachers contemplating a child's readiness for school are influenced by the social and effective factors considered to be important for adjustment to the school environment. Chronological age was also a strong and significant influence on parent and teacher perspectives of school readiness. The older the child was when entering school, the more prepared they were perceived to be for the experience by parents and teachers. Home environment was not found to be a significant influence on these perspectives, nor was child developmental level. It was found that

teachers' perspectives were significantly influenced by gender. Teachers generally perceive girls more favorably than boys, as well as more prepared for school and well-adjusted once they begin (McBryde et al., 2004).

In an earlier study using statistics from the National Center for Education, West, Hausken, and Collins (1993) explored the opinions of parents of preschoolers and the opinions of kindergarten teachers. Parents and teachers agreed that it is very important for the child to communicate his or her needs, wants, and thoughts verbally, and that the child be enthusiastic and curious in approaching new activities. A large percentage of both groups (92% of parents and 56% of teachers) also believed it is very important that a child be able to take turns and share, as well as to sit still and pay attention, but there was a greater disparity in the responses between parents and teachers for these characteristics (West et al., 1993). In fact, less than half (42%) of the kindergarten teachers believed that sitting still and paying attention were not as important as being able to share and take turns, while 80% of parents believed these were very important characteristics for children to have as they entered kindergarten (West et al., 1993). Kindergarten teachers' primary concerns were about children's social behaviors in schools. Providing children with access to the interactive life of the classroom, to develop social skills, and to acquire appropriate forms of behavior in groups were valued goals to the kindergarten teachers. The greatest disparity was on the importance of children being able to count to 20 or more, knowing the letters of the alphabet, and using pencils or paint brushes. The

percentage of parents who rated counting and knowing the alphabet as very important were six to eight times greater than those of teachers, similar to the findings of Lin et al (2003) in regard to expectations of preschool teachers for kindergarten readiness. Parents were three times more likely than teachers to rate the ability to use pencils and paint brushes as very important for kindergarten readiness (West et al., 1993). Parents with less than a high school education, high school educated parents, and college educated parents alike were more likely to rate behaviors that pertain to children's social and emotional behaviors (e.g. taking turns, sharing, sitting still, and being attentive), their verbal skills, and their curiosity and enthusiasm for learning as very important than they were school-related skills. Parents with less formal education were more likely than parents with higher levels of education to rate sitting still and paying attention, counting, knowing the alphabet, and using pencils or paint brushes as very important for a child about to enter kindergarten (West et al., 1993). The majority of parents at each education level rated a child's ability to share and take turns, communicate his/her needs, wants, and thoughts verbally, and approach new activities with enthusiasm and curiosity as very important.

In a similar study, Piotrkowski, Borsko, and Matthews (2000) compared the beliefs of preschool teachers, kindergarten teachers, and parents in one mostly Hispanic and African-American high-need urban school district. These authors assessed beliefs about school readiness through the use of a self-authored survey. Both parents and teachers had similar beliefs about General Readiness Resources, such as health, peer

relations, ability to communicate well in native language, emotional maturity, self-care abilities, interest and engagement. Interestingly, when Classroom-Related Readiness Resources were examined, parents placed more importance on compliance with teacher authority and compliance with classroom routines than teachers indicated (Piotrkowski et al., 2000). Seven out of ten parents indicated a belief that it was "absolutely necessary" for children to be able to express their needs and feelings in English, while only three out of ten teachers shared this belief (p. 540). Parents also put a higher importance on basic knowledge (knowing body parts, colors, the alphabet, etc.) than preschool teachers. Interestingly, preschool teachers placed higher importance on these skills than kindergarten teachers.

In the above studies, parent and teacher perspectives of school readiness were explored. Parent and teacher perspectives are similar in that they both want children to develop social skills needed to be ready for school. However, parents and teachers differed in that parents put more emphasis on listening and following the classroom routines than teachers specified (Piotrkowski et al., 2000). Parents also felt that counting and knowing the alphabet were more important than teachers indicated (West et al., 1993). From the above studies, teachers and parents seem to differ in their perspectives about school readiness. Future research should continue to explore the difference between the two.

Summary

The literature review provided a springboard for further exploration about school readiness, teacher perspectives, parent perspectives, and the impact technology has on preparing children for reading, writing, and arithmetic. Based on the research mentioned above, school readiness has been explored using many different variables (income, play activities, cognitive development, socioemotional development, physical development, language development, and the role of technology on school readiness), however the teacher and parent perspectives on the role of technology in school readiness have not been explored.

In this study, the primary interest of the researcher was to discover the type of technology that is being used to assist children in the development of school readiness skills in preschools and at home, as well as to explore teachers' and parents' perspectives on the role of technology in preparing children for school entry. The researcher developed two online questionnaires: one for parents and one for teachers. The data collected from these questionnaires was used to document the type of technology being used at home as well as the type of technology being used in the classroom. The data collected from the questionnaires was used to document the parents' perspectives of the role of technology as well as teachers' perspectives of the role of technology in preparing children for school entry. The following research questions were explored:

1. What are parents' and teachers' perspectives of school readiness?

2. Are the roles of the adult (parent, preschool teacher, kindergarten teacher) associated with their perspectives of school readiness?
3. What are parents' and teachers' perspectives of the role of "screen time" on school readiness?
4. Are there differences between parents and teachers in their perspectives of the role of "screen time" on school readiness?
5. How much time is spent at home and in classrooms using "screen time" technology?
6. Are there demographic differences in the amount of time children spend using "screen time" technology at home and in classrooms?
7. How much time do parents and teachers spend interacting with children using "screen time" technology?
8. Are there demographic differences in the amount of time parents and teachers spend interacting with children using "screen time" technology?
9. What types of "screen time" technology are teachers and parents using in environments for young children (home, preschool, kindergarten)?
10. Are there associations between the adult role and the types of "screen time" technology used in different settings (home, preschool, kindergarten)?

11. What are teachers' and parents' perspectives of the purpose of "screen time" technology being used in environments for young children?
12. Is adult role associated with perspectives of the purpose of "screen time" technology being used in environments for young children?

CHAPTER III

METHODOLOGY

A quantitative research design was used, which involved a description of teachers' perspectives and parents' perspectives on the role of "screen time" in preparing children for formal schooling. The purpose of quantitative research was to generalize from a sample to a population so that inferences could be made about some characteristic, attitude, perception or behavior of this population (Babbie, 1990).

Participants

Participants in this study were kindergarten teachers, preschool teachers, first grade teachers, and parents of preschool aged children in a medium-sized suburb of a large metropolitan area in North Texas (population: 119,454), in addition to the state of Texas (population: 25,145,561 In the state of Texas, there are 10,649, 401 potential parents of preschool aged children (U.S. Census Bureau, 2011). Seventy-eight parents completed the questionnaire (4.2% male, 50% female, 45.8% did not respond to this item). The majority of the respondents earned relatively high incomes, with 37% indicating their total family income was more than $100,000, 5% between $90,000 and $99,999, 11% between $80,000 and $89,999 and 47% reporting a total family income of less than $80,000. Similarly, this sample was highly educated with only one percent of

parents reporting a high school diploma as their highest educational attainment, seven percent reporting having some college, six percent with a technical degree, 17% with a Bachelor's degree, three percent with some post graduate work, 15% with a Master's degree, and six percent with a Doctoral degree (the remaining 46% did not respond to this item). Thirteen percent of the parents reported answering the survey using their three year old as the focal child, 15% using their four year olds, 10% using their five year olds, and 5% using their six year olds. The remaining 57% of parents did not respond to this question.

In addition to parents, 47 teachers completed the questionnaire (4% males, 92% females, 4% did not respond to this item). Among the teachers, preschool teachers (28%), kindergarten teachers (35%), first grade teachers (33%), and the remaining four percent did not respond to this question. The majority of teacher respondents earned high incomes, with 10% reported having a total family income of $100,000 more, two percent reported having a total family income between $90,000 and $99,999, eight percent having a total family income between $80,000 and $89,999, and 39% reported having a total family income of less than $80,000. Fifty-one percent of teachers reported having a Bachelor's Degree, 16% reported to having some post graduate work, and 22% reported having a Masters degree. Four percent did not respond this question. Fourteen percent of teachers reported teaching three year olds, 14% taught four- year- olds, 35% taught five-

year- olds, and 33% taught six- year- olds. The remaining four percent did not respond to this question. See Table 1 for a detailed summary of the participants in this study.

Table 1

Summary of Demographic Characteristics of the Sample (n=78 parents, 47 teachers)

Measures	Parents	Teachers
Gender		
Male	4.2%	4.1%
Female	50.0%	91.0%
Age of the Focal Child		
Three years old	13.2%	14.3%
Four years old	14.6%	14.3%
Five years old	9.7%	34.7%
Six years old	4.9%	32.7%
Total Family Income		
Below 5,000	1.9%	2.0%
5,001-9,999	1.9%	0.0%
10,000-19,999	3.7%	0.0%
20,000-29,999	11.1%	0.0%

(Continued)

Table 1 Cont'd

30,000-39,999	1.9%	2.0%
40,000-49,999	13.0%	8.2%
50,000-59,999	5.6%	8.2%
60,000-69,999	3.7%	12.2%
70,000-79,999	3.7%	6.1%
80,000-89,999	11.1%	8.2%
90,000-99,999	5.6%	2.0%
100,000 and above	37.0%	10.2%
Educational level		
High School	1.4%	0.0%
Some College	5.6%	0.0%
Associates/Technical Degree	5.6%	6.1%
Bachelor Degree	17.4%	51.0%
Post Graduate work	2.8%	16.3%
Master Degree	15.3%	22.4%
Doctoral Degree	5.6%	0.0%
Adult Role		
Parent	100%	
Preschool Teacher		28%
Kindergarten Teacher		35%
First Grade Teacher		33%

IRB (Internal Review Board)

After obtaining approval from the school districts' IRB (Denton, Houston), the researcher submitted the IRB of the Texas Woman's University to obtain approval from them. Upon approval from the district and university IRBs, the principals from each elementary school in each school district were approached via a recruitment email explaining the purpose of the study and requesting permission to recruit teachers from his or her school. The same process was followed for obtaining consent from preschool and child care center directors to recruit parents and teachers from their programs. Additional respondents were recruited through snowball sampling, posting to social networks sites (Facebook, Twitter), handing out flyers in front of grocery stores (Wal-Mart, Kroger, Albertsons), and sending out emails to the local university faculty members (TWU, UNT).

Measures

Parent questionnaire. An online questionnaire developed by the researcher was administered to the participants (see Appendix A). This questionnaire was designed to obtain demographic information, parents' perspectives on school readiness, as well as information on parents' perspectives on the role of technology on school readiness, and the types and amounts of technology their children participate with at home. A pilot study was conducted in which ten parents were asked to take the questionnaire to determine the

time it would take for completion and to determine if there were any misleading information. The results of the pilot study revealed that it took the parents on average 15 minutes to complete the questionnaire. The parents did not report any misleading information on the questionnaire.

Teacher questionnaire. An online questionnaire developed by the researcher was administered to the participants identified as kindergarten or preschool teachers (see Appendix B). This questionnaire was designed to obtain demographic information, teachers' perspectives on school readiness, information on teachers' perspectives on the role of technology on school readiness, as well as the uses of technology in the classroom. A pilot study was conducted with nine current kindergarten teachers and one retired kindergarten teacher who were asked to take the questionnaire to determine the time it would take for completion and to determine if there were any misleading information. The results of the pilot study revealed that it took the teachers on average 10 minutes to complete the questionnaire. The teachers did not report any misleading information on the questionnaire.

Independent variables. The independent variables used in this study were: gender of the focal child, gender of the adult completing the questionnaire, role of the adult completing the questionnaire (parent, preschool teacher, and kindergarten teacher), age of the focal child, total family income level, and educational level.

Role of adult completing questionnaire. Respondents indicated their job title (kindergarten teacher, preschool teacher, or first grade teachers) on the demographic portion of the questionnaire. (See items 4 and 11 on the teacher questionnaire.) Parents completed a separate questionnaire and their status as a parent was coded in the digital data file. Due to the low number of respondents in each of the teacher groups, these were combined into one group for analysis.

Gender. Respondents indicated whether they were male or female on the demographic portion of the questionnaire. (See item 1 on the parent questionnaire and item 1 on the teacher questionnaire.)

Gender of the focal child. Information was gathered from the item on the parent questionnaire that asked for the focal child's gender. (See item 10 on the parent questionnaire.)

Age of the focal child. Information was gathered from the item on the questionnaire that asked for the focal child's age. (See item 9 on the parent questionnaire and item 10 on the teacher questionnaire.)

Income level. Subjects were asked to indicate their total family income with a range from $0-over $100,000 in increments of $10,000 (except for the first and second choices: $0-$4,999 and $5,000-$9,999). (See item 50 on the parent questionnaire and item 49 on the teacher questionnaire for a more detailed breakdown.)

Educational level. Respondents indicated the highest educational level they have achieved ranging from some high school to an earned doctorate. (See item 6 on the parent questionnaire and item 7 on the teacher questionnaire.)

Dependent variables. This study investigated the association of the above independent variables with the following dependent variables: parents' and teachers' perspectives of school readiness, parents' and teachers' perspectives of the role of technology on school readiness, the amount of time spent using technology at home and in the classroom, the amount of time parents' and teachers' spend interacting with their students using technology, the type of technology used at home and in the classroom, and teachers and parents perspectives on the purpose of technology in the classroom and at home.

Parents' perspectives of school readiness. Information was gathered from the items on the questionnaire that asked for parents' perspectives on school readiness. Parents selected from a list of 16 items that indicated which skills parents believe will help their children be "ready for kindergarten." Parents also selected from a list of three items that indicated which skills parents believe will assist their children prepare for formal schooling. The frequency with which each item is indicated was counted for all participants to provide a frequency count for the types of skills parents view as important for kindergarten readiness. These frequency counts were used as categorical variables in the analyses. (See items 13-15 on the parent questionnaire.) Categories were collapsed

into smaller ones for statistical analyses in the following manner: "Counting" (items a, b); "Letter Recognition" (items c, d); "Fine Motor Skills" (items f, g); "Socioemotional Skills" (items e, h, o); and "Identification" (items i, j, k, l, m, n, p).

Teachers' perspectives of school readiness. Information was gathered from the item on the questionnaire that asked for teachers' perspectives on school readiness. Teachers selected from a list of 16 items that indicated which skills teachers believe will help children be "ready for kindergarten." Teachers also selected from a list of three items that indicated which skills teachers think will help their children for formal schooling. The frequency with each item is indicated was counted for all participants to provide a frequency count for the types of skills teachers view as important for kindergarten readiness. These frequency counts were used as categorical variables in the analyses. (See items 11-13 on the teacher questionnaire.) Categories were collapsed into smaller ones for statistical analyses in the following manner: "Counting" (items a, b); "Letter Recognition" (items c, d); "Fine Motor Skills" (items f, g); "Socioemotional Skills" (items e, h, o); and "Identification" (items i, j, k, l, m, n, p).

Parents' perspectives of the role of technology on school readiness. Information was gathered from the item on the questionnaire that asked for parents' perspectives on the role of technology on school readiness. Parents indicated their level of agreement with statements like "Computers and other technological tools are useful tools to help children develop school readiness skills" on a scale of 1 to 5 with 1 being

"Agree" and 5 being "Disagree." These ratings for each item were averaged for all participants to provide a mean score for each item. These mean scores were used as continuous variables in the analyses. (See item 22 on the parent questionnaire.)

Teachers' perspectives of the role of technology on school readiness. Information was gathered from the item on the questionnaire that asked for teachers' perspectives on the role of technology on school readiness. Teachers indicated their level of agreement with statements like "Computers and other technological tools are useful tool to help children develop school readiness skills" on a scale of 1 to 5 with 1 being "Agree" and 5 being "Disagree". These ratings for each item were averaged for all participants to provide a mean score for each item. These mean scores were used as continuous variables in the analyses. (See item 20 on the parent questionnaire.)

Amount of time spent using technology in the classroom. Information was gathered from the items on the questionnaire that asked for teachers' perspectives on the amount of time spent using technology in the classroom. Teachers indicated how many hours per day and how many hours per week they spend using technology in the classroom. These hours for each item were averaged for all participants to provide a mean score for each item (daily and weekly use). These mean scores were used as continuous variables in the analysis. (See items 21-28 and 29-36 on the teacher questionnaire.)

Amount of time spent using technology at home. Information was gathered from the items on the questionnaire that asked for parents' perspectives on the amount of time spent using technology at home. Parents indicated how many hours per day and how many hours per week they spent using technology at home. These ratings for each item were averaged for all participants to provide a mean score for each item. These mean scores were used as continuous variables in the analysis. (See items 23-29 and 30-36 on the parent questionnaire.)

Amount of time teachers spend interacting with their students using technology. Information was gathered from the items on the questionnaire that asked for teachers' perspectives on the amount of time teachers spent interacting with their students using technology. Teachers indicated how many hours per day and how many hours per week they spent interacting with their students using technology in the classroom. These ratings for each item were averaged for all participants to provide a mean score for each item. These mean scores were used as continuous variables in the analysis. (See items 37-43 on the teacher questionnaire.)

Amount of time parents spend interacting with their children using technology. Information was gathered from the items on the questionnaire that asked for parents' perspectives on the amount of time parents spent interacting with their children using technology. Parents indicated how many hours per day and how many hours per week they spent interacting with their children using technology at home. These ratings

for each item were averaged for all participants to provide a mean score for each item. These mean scores were used as continuous variables in the analysis. (See items 37-43 on the parent questionnaire.)

Type of technology being used at home. Information was gathered from the item on the questionnaire that asked for parents' identification of the types of technology being used at home. Frequencies for each type of technology were computed. These types of technology were used as categorical variables in the analyses. Categories were collapsed into smaller ones for statistical analysis in the following manner: "Educational Computer games" (Item j), "Educational TV/videos" (Item a, c, d), "Non-educational TV/Videos" (Item b), "Educational games" (Item e, f), "Video gaming systems" (g-i)), "Entertainment technology" (k, l, m), and "Other" (Item n). (See item 21 on the parent questionnaire.)

Type of technology being used in the classroom. Information was gathered from the item on the questionnaire that asked for teachers' identification of the types of technology being used in the classroom. Frequencies for each type of technology were computed. These types of technology were used as categorical variables in the analyses. Categories were collapsed into smaller ones for statistical analysis in the following manner: "Educational Computer games" (item j), "Educational TV/videos" (items a, c, d), "Non-educational TV/Videos" (Item b), "Educational games" (items e, f), "Video

gaming systems" (items g-i)), "Entertainment technology" (items k, l, m), and "Other" item n). (See items 20 on the teacher questionnaire.)

Teachers' perspectives on the purpose of technology in the classroom. Information was gathered from the items on the questionnaire that asked for teachers' perspectives on the purpose of technology in the classroom. Frequencies for each teacher's perception on the purpose of technology were computed. These frequency counts were used as categorical variables in the analyses. Categories were collapsed into smaller ones for statistical analysis in the following manner: "Reading Skills" (items a-c), "Fine Motor Skills" (items d, e), "Domains of development" (items f-i), and "Technology knowledge" (item j), and "Technology serves no purpose" (k). (See items 48-49 the teacher questionnaire.)

Parents' perspectives on the purpose of technology at home. Information was gathered from the items on the questionnaire that asked for parents' perspectives on school readiness. Frequencies for each parents' perception on the purpose of technology were computed. These frequency counts were used as categorical variables in the analyses. Categories were collapsed into smaller ones for statistical analysis in the following manner: "Reading Skills" (items a-c), "Fine Motor Skills" (items d, e), "Domains of development" (items f-i), "Technology knowledge" (item j), and "Technology serves no purpose" (item k). (See items 47-48 on the parent questionnaire.)

Procedure

This study was conducted using teachers from elementary schools in districts across the state of Texas and parents and teachers of children in preschool and/or child care programs serving children 3 to 5 years old. The parents included only English-speaking adults with children in preschool programs/child care centers. The teachers included only English-speaking adults of preschool and kindergarten classrooms. The researcher contacted the school district as well as the principals of the elementary schools and directors of preschool programs/child care centers to get permission to contact the teachers. The researcher followed and maintained the research ethical guidelines to ensure the protection of the participants in the study. For the protection of the research participants the researcher submitted her research proposal to the University Institutional Review Board (IRB) and the school districts' IRB.

After obtaining the permission from the principal/director and approval from the University Institutional Review Board, as well as the school districts, the researcher began data collection. In this study, the researcher contacted the elementary teachers, preschool teachers, first grade teachers, and directors of preschool programs/child care centers in each of the participating elementary schools and child care centers. The researcher provided a website address where the teachers could go online and complete the questionnaire. The researcher also asked the principals and childcare center directors

to post flyers in the office giving parents information about the questionnaire and study. The flyer contained the web address where parents could access the questionnaire.

The foci was parents' and teachers' perspectives of school readiness, parents' and teachers' perspectives of the role of "screen time" on school readiness, the amount of technology used at home and in the classroom, the type of technology used at home and in the classroom, teachers' and parents' perspectives on the skills needed for school readiness, and teachers' and parents' perspectives on the purpose of technology in the classroom and at home.

All data was obtained from the participating elementary schools in the state of Texas as well as from participating childcare centers in the state of Texas. Teacher and parent online questionnaires were used for the collection of data. All data was secure in an online database that requires a password and a username for access that only the researchers were able to access.

Summary

This chapter described the methodology of this quantitative study. The participants and the research site that were used were introduced. The instruments that were used for data collection were the online parent and teacher questionnaire developed by the researcher. The independent and dependent variables were identified and discussed. Data collection procedures were also introduced in this chapter.

CHAPTER IV

RESULTS

In the following chapter, an account of the results is presented beginning with the preliminary analyses, followed by the twelve research questions and findings.

Preliminary Analyses

Before beginning statistical analyses, descriptive statistics were calculated to provide information about the distributions of participants falling into each gender of the focal child, age of the focal child, gender of the adult completing the questionnaire, total family income level, educational level, and the number of respondents with children in each age group.

The distributions for continuous variables were examined to determine normality. The values of skewness and kurtosis for continuous variable distributions were not significantly different from zero, therefore no transformations were necessary (Lutz, 1983). Additionally, a correlation matrix was computed and the independent variables examined to determine if any were too highly correlated with one another. Analyzing the parents' data, the education level and total family income was found to be correlated, (r (53) = .65, p< .01). Total family income and the age of the focal child was found to be correlated, (r (53) =.28, p<.05). Analyzing the teachers' data, the educational level and the total family income was found to be correlated, (r (45) =.41, p<.05). These variables

were kept separate based on the literature that parent education seems to have a unique influence on children's academic achievement (Shonkoff & Phillips, 2000; Hair, Halle, Terry-Humen, Lovelle, & Calkins, 2006). For the categorical variables, a contingency table was constructed to determine independence of variables. Analyzing the categorical variables, it was found that ability to navigate on a website yielded a significant contingency coefficient with "can count to 10 or more" (.008), "can count to 20 or more" (.014), and "can use pencils to write letters" (.036). Math abilities yielded a significant contingency coefficient with "can count to 20 or more" (.001) "can use pencils to write letters" (.030), "can read ones' own name" (.029), "can identify colors" (.039), and "can identify shapes" (.016). Since these variables were found to be highly correlated, they were combined for later analyses.

Research Questions and Hypotheses

Q1: What are parents' and teachers' perspectives of school readiness?

Descriptive statistics are provided to offer data on parents' and teachers' perspectives of school readiness and reveal some basic differences in perspectives between these two groups. More teachers than parents (68% of teachers; 29% of parents) indicated that counting to 10 or more was important for being prepared for kindergarten. Similarly, more teachers than parents (53% of teachers and 9.7% of parents) indicated that recognizing half of the letters of the alphabet was necessary for being prepared for

kindergarten. Additionally, more teachers than parents (92% of teachers; 40% of parents) indicated that sharing toys was necessary for getting ready for kindergarten. More teachers than parents (72% of teachers; 32% of parents) indicated that students using pencils was necessary for getting ready for kindergarten. Furthermore, more teachers than parents (87% of teachers, 33% of parents) indicated that a student being able to read his/her own name was necessary for getting ready for kindergarten. Interestingly, more teachers than parents (42% of teachers; 16% of parents) indicated that using a computer mouse was necessary for getting ready for kindergarten. Additional information about the abilities indicated as important by parents and teachers as necessary for kindergarten and school readiness are provided in the Tables 2 and Table 3.

Table 2

Percentages of Parents' and Teachers' Perspectives on "Ready for Kindergarten" (*n*=78 parents, 47 teachers)

Measure	Parents	Teachers
Count to 10 or more	29.2%	68.1%
Count to 20 or more	14.6%	27.7%
Recognize ½ of letters of alphabet	9.7%	53.2%
Recognize all the letters of alphabet	33.3%	44.7%
Share toys with others	40.3%	91.5%

(Continued)

Table 2 Cont'd

Use pencils	31.9%	72.0%
Use brushes	25.7%	44.7%
Sit still and pay attention	34.7%	76.6%
Read own name	33.3%	87.2%
Identify colors	40.3%	76.6%
Identify feelings	36.1%	66.0%
Identify shapes	39.6%	68.1%
Identify 5 Senses	23.6%	31.9%
Identify animal parts	20.8%	21.3%
Create stories	22.2%	29.8%
Identify places at home/on campus	27.1%	34.0%
Can use a mouse	16.7%	42.6%
Can use a keyboard	12.5%	19.1%
Can turn on a computer	10.4%	10.6%
Can navigate a website	7.6%	4.3%
Can open a word documents	2.1%	2.1%
Can open a webpage	3.5%	4.3%

Table 3

Percentage of Parents' and Teachers' Perspectives of School Readiness (*n*=78 parents, 47 teachers)

Measures	Parents	Teachers
Ability to Read	21.5%	76.6%
Ability to Write	27.8%	78.7%
Ability to do Math	24.3%	76.6%
Can use a mouse	18.8%	36.2%
Can use a keyboard	12.5%	21.3%
Can turn a computer on	11.8%	17.0%
Can navigate a website	7.6%	6.4%
Can open a word Document	1.4%	4.3%
Can open a web page	2.8%	4.3%

Q2: Are the roles of the adult (parent, teacher) associated with their perspectives of school readiness?

Hypothesis One

It was hypothesized that the adult's role with the child would be associated with her or her perspectives of school readiness. To test this hypothesis, a series of Chi-squared analyses were conducted to determine if there was an association between parents' and teachers' perspectives of what was necessary for kindergarten.

Parents and teachers were asked to select from a list of 16 items that indicated which skills they believe will help their children be "ready for kindergarten." They were also asked to select from a list of three items that indicated which skills they thought would benefit children formal school entry. The analysis of these items indicated that there was a significant association between parents' and teachers' perspectives on the following items indicating a child was "ready for kindergarten": counting to 20 or more for (X^2= 11.94, df=3, p<0.05), recognizing half the letters of the alphabet (X^2 =8.98, df=3, p< 0.05), identifying colors (X^2= 16.51, df=3, p<0.05), identifying feelings (X^2 =14.22, df=3, p<0.05), identifying the five senses (X^2=7.89, df=3, p<0.05). The analysis of the residuals showed that parents' and teachers' perspectives differed on what measures were important for children to be ready to enter formal schooling. Parents did not identify that counting to 20 or more was as important as the teachers did. Additionally, teachers felt children being able to recognize half the letters of the alphabet, identifying colors, shapes, and feelings as well as the five senses were more important for children being ready for formal schooling than did the parents.

Q3: What are parent's and teachers' perspectives of the role of "screen time" on school readiness?

Descriptive statistics are provided to offer data on the role of technology expressed by parents and teachers in getting children ready for kindergarten. Percentages and mean scores of parents and teachers in their ratings of the role of technology are

provided in Table 4 and Table 5. Interestingly, more teachers than parents (50% of teachers; 32% of parents) indicated that technology can aid with reading. Additionally, more teachers than parents (41% of teachers; 26% of parents) indicated that technology can benefit language development and (41% of teachers; 25% of parents) cognitive development.

Table 4

Percentages of Parents' and Teachers' Rating of the Role of Technology (*n*=78 parents, 47 teachers)

Measures	Parents	Teachers
Can help with reading	32%	50%
Can help with recognizing shapes	25%	27%
Can help with recognizing words	25%	25%
Can help with writing skills	12%	18%
Can help with fine motor skills	18%	20%
Can help with Language Development	26%	41%
Can help with Cognitive Development	25%	41%
Can help with Social Development	8%	14%

Table 5

Means of Parents' and Teachers' Rating of the Role of Technology (*n*=78 parents, 47 teachers)

Measures	n	Mean	SD	Min	Max	Range
Can help with reading						
Parents	61	2.16	1.098	1	4	1-4
Teachers	32	2.19	0.998	1	4	1-4
Can help with recognizing shapes						
Parents	61	2.61	1.307	1	4	1-4
Teachers	32	2.97	1.257	1	4	1-4
Can help with recognizing words						
Parents	61	2.46	1.191	1	4	1-4
Teachers	31	2.94	1.153	1	4	1-4
Can help with writing skills						
Parents	61	3.30	1.442	1	4	1-4
Teachers	32	3.47	1.218	1	4	1-4
Can help with fine motor skills						
Parents	54	2.93	1.385	1	4	1-4
Teachers	32	3.44	1.390	1	4	1-4
Can help with Language development						
Parents	54	2.26	1.067	1	4	1-4
Teachers	32	2.50	1.164	1	4	1-4

(Continued)

Table 5 Cont'd

Can help with Cognitive Development					
Parents	54	2.44	1.284	1 4	1-4
Teachers	32	2.50	1.136	1 4	1-4
Can help with Social development					
Parents	54	3.56	1.264	1 4	1-4
Teachers	32	2.50	1.289	1 4	1-4

Q4: Are there differences between parents and teachers in their perspectives of the role of "screen time" on school readiness?

Hypothesis One

It was hypothesized that parents and kindergarten teachers would differ in their perspectives of the role of "screen time" on school readiness.

Hypothesis Two

It was hypothesized that preschool and kindergarten teachers would differ in their perspectives of the role of "screen time" on school readiness.

Hypothesis Three

It was hypothesized that parents and preschool teachers would not differ in their perspectives of the role of "screen time" on school readiness.

To test these hypotheses, a MANOVA was conducted to determine if there were differences between parents', preschool teachers', and kindergarten teachers' perspectives of the role of "screen time" on school readiness, using adult role (parent, preschool teacher, and kindergarten teacher) as the independent variables and the mean scores for the rated scores to perspectives of "screen time" items as the dependent variables. There were not enough respondents for preschool teachers and kindergarten teachers so they were combined into teachers for the final analysis.

A MANOVA revealed that there was no significant multivariate main effect for adult role. Therefore, hypotheses one and two were not confirmed; however, hypothesis three was confirmed. There were no significant pair wise differences found.

Q5: How much time is spent at home and in classrooms using "screen time" technology?

Hypothesis One

Descriptive statistics are provided to offer data on the time spent at home and in the classrooms using technology on a weekly basis per hour in Table 6. Descriptive statistics are provided to offer data on the time spent at home and in the classrooms using technology on a daily basis per hour in Table 7. Interestingly, on a weekly basis more children spent time using computers for 1-2 hours in the classroom than at home (26.5% in classroom, 2.8% at home), using educational games (26.4% in the classroom, 7.0% at

home), Internet (18.3% in the classroom, 1.4% at home), and other forms (4.1% in the classroom, 0.7% at home). On daily basis, more children spent time using computers for 1-2 hour in the classroom than at home (20.1% in classroom, 4.9% at home), using educational games (12.2% in the classroom, 5.5% at home), using video gaming systems (4.0% in the classroom, 2.8% at home), Internet (8.1% in the classroom, 2.8% at home), and other forms (digital cameras, Dora the Explorer, IPad, etc.) (4.0% in the classroom, 0.7% at home).

Table 6

Time Spent Using Technology on a Weekly Basis in Hours (*n*=78 parents, 47 teachers)

Measures	Home	Classroom
Computers		
0 hrs	17%	14.3%
1-2 hrs	2.8%	26.5%
3-4 hrs	.14%	4.0%
5-6 hrs	1.4%	0.0%
7 hrs or more	7.0%	0.0%
Educational TV/Video		
0 hrs	9.0%	26.5%
1-2 hrs	7.0%	4.1%
3-4 hrs	3.5%	0.0%

(Continued)

Table 6 Cont'd

5-6 hrs	2.2%	0.0%
7 hrs or more	0.0%	0.0%
Educational Games		
0 hrs	14.6%	12.2%
1-2 hrs	7.0%	26.4%
3-4 hrs	1.4%	2.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	1.4%	0.0%
Video Gaming systems		
0 hrs	17.4%	30.6%
1-2 hrs	4.2%	4.1%
3-4 hrs	0.7%	0.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	1.4%	0.0%
Cell Phones		
0 hrs	19.4%	34.7%
1-2 hrs	2.8%	0.0%
3-4 hrs	0.0%	0.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%

(Continued)

Table 6 Cont'd

DVD player		
0 hrs	13.2%	30.6%
1-2 hrs	6.0%	4.1%
3-4 hrs	2.8%	0.0%
5-6 hrs	1.4%	2.0%
7 hrs or more	1.4%	0.0%
Internet		
0 hrs	18.1%	16.3%
1-2 hrs	1.4%	18.3%
3-4 hrs	1.4%	2.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	0.7%	0.0%
Other Forms		
0 hrs	19.4%	24.5%
1-2 hrs	0.7%	4.1%
3-4 hrs	0.0%	2.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%

Table 7

Time Spent Using Technology on a Daily Basis in Hours (*n*= 78 parents, 47 teachers)

Measures	Home	Classroom
Computers		
0 hrs	9.7%	18.3%
1-2 hrs	4.9%	20.1%
3-4 hrs	0.0%	0.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%
Educational TV/Video		
0 hrs	8.3%	14.3%
1-2 hrs	7.7%	8.1%
3-4 hrs	0.0%	0.0%
5-6 hrs	1.4%	0.0%
7 hrs or more	0.0%	0.0%
Educational Games		
0 hrs	9.7%	16.2%
1-2 hrs	5.5%	12.2%
3-4 hrs	0.7%	0.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%

(Continued)

Table 7 Cont'd

Video Gaming systems		
0 hrs	12.5%	20.4%
1-2 hrs	2.8%	4.0%
3-4 hrs	0.7%	0.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%
Cell Phones		
0 hrs	15.3%	22.4%
1-2 hrs	0.0%	2.0%
3-4 hrs	0.0%	0.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%
DVD player		
0 hrs	11.8%	18.4%
1-2 hrs	5.5%	4.1%
3-4 hrs	0.0%	0.0%
5-6 hrs	0.7%	2.0%
7 hrs or more	0.0%	0.0%
Internet		
0 hrs	13.2%	18.3%

(Continued)

Table 7 Cont'd

1-2 hrs	2.8%	8.1%
3-4 hrs	0.7%	0.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%
Other Forms		
0 hrs	13.2%	16.3%
1-2 hrs	0.7%	4.0%
3-4 hrs	0.0%	0.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%

It was hypothesized that there would be a difference in the amount of time spent using technology at home versus in the classroom. To test this hypothesis, a MANOVA was computed with locations (home, classroom) as the independent variable and the time spent using technology (alone, with parent, with teacher, with another adult, with peers/siblings) as the dependent variables.

A MANOVA revealed there was no significant multivariate main effect for locations (home, classroom) and the time spent using technology.

Q6: Are there demographic differences in the amount of time children spend using "screen time" technology at home and in classroom?

Hypothesis One

It was hypothesized that there would be demographic differences in the amount of time children spent using technology at home. To test this hypothesis, a MANOVA was conducted using demographic information (age of child, gender of child, family income, and parental education) as the independent variables and time spent using technology with different levels of interaction with a more competent peer (alone, with parent, with another adult, with peers/siblings) at home as the dependent variables to determine if differences exist in time spent using technology.

A MANOVA revealed that there was a significant main effect for parental education and time spent using technology, (F (32, 2) =49.75, p=.000). Post hoc tests showed a significant difference between parents with an associates/technical degree and parents with some college (m= 1.55, p=.000, d=.80), a Bachelor's degree, a Master's Degree or a Doctoral Degree (m=1.83, p=.000, d=.0.45).

Hypothesis Two

It was hypothesized that there would be demographic differences in the amount of time children spent using technology in the classroom. To test this hypothesis, a MANOVA was conducted using demographic information (age group of the children

being taught, gender of teacher, family income, and teacher education) as the independent variables and time spent using technology (alone, with teacher, with another adult, with peers/siblings) in the classroom as the dependent variables to examine whether differences exist in time spent using technology.

A MANOVA revealed that there were no significant multivariate main effects.

Q7: How much time do parents and teachers spend interacting with children using screen time technology?

Descriptive statistics in the form of percentages are provided to offer data on the time parents and teachers spent interacting with children on a weekly in Table 8. Descriptive statistics in the form of percentages are provided to offer data on the time parents and teachers spent interacting with children on a daily basis in Table 9.

Table 8

Time Spent Interacting with Children using Technology per Week in Hours (*n*=78 parents, 47 teachers)

Measures	Parents	Teachers
Computers		
0 hrs	11.8%	18.4%
1-2 hrs	8.1%	16.3%

(Continued)

Table 8 Cont'd

3-4 hrs	3.0%	0.0%
5-6 hrs	0.7%	0.0%
7 hrs or more	0.0%	0.0%
Educational TV/Video		
0 hrs	5.6%	14.3%
1-2 hrs	10.5%	18.3%
3-4 hrs	4.9%	2.0%
5-6 hrs	3.5%	0.0%
7 hrs or more	0.0%	0.0%
Educational Games		
0 hrs	11.1%	18.4%
1-2 hrs	10.4%	12.2%
3-4 hrs	2.8%	0.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%
Video Gaming systems		
0 hrs	14.6%	26.5%
1-2 hrs	4.9%	2.0%
3-4 hrs	0.7%	0.0%

(Continued)

Table 8 Cont'd

5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%
Cell Phones		
0 hrs	18.8%	28.6%
1-2 hrs	1.4%	0.0%
3-4 hrs	0.0%	0.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%
DVD player		
0 hrs	11.1%	22.4%
1-2 hrs	7.7%	6.1%
3-4 hrs	2.8%	0.0%
5-6 hrs	0.7%	0.0%
7 hrs or more	0.0%	0.0%
Internet		
0 hrs	14.6%	16.3%
1-2 hrs	6.0%	16.4%
3-4 hrs	0.0%	2.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%

(Continued)

Table 8 Cont'd

Other Forms		
0 hrs	16.0%	16.3%
1-2 hrs	2.2%	4.0%
3-4 hrs	0.0%	2.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%

Table 9

Time Spent Interacting with Children using Technology per Day in Hours (*n*=78 parents, 47 teachers)

Measures	Parents	Teachers
Computers		
0 hrs	9.0%	14.3%
1-2 hrs	4.2%	12.2%
3-4 hrs	0.0%	0.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%
Educational TV/Video		
0 hrs	4.2%	16.2%
1-2 hrs	13.9%	6.1%

(Continued)

Table 9 Cont'd

3-4 hrs	0.0%	0.0%
5-6 hrs	0.7%	0.0%
7 hrs or more	0.0%	0.0%
Educational Games		
0 hrs	11.2%	16.3%
1-2 hrs	4.2%	6.1%
3-4 hrs	0.0%	0.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%
Video Gaming systems		
0 hrs	11.2%	20.4%
1-2 hrs	2.1%	2.0%
3-4 hrs	0.0%	0.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%
Cell Phones		
0 hrs	13.9%	22.4%
1-2 hrs	0.0%	2.0%
3-4 hrs	0.0%	0.0%

(Continued)

Table 9 Cont'd

5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%
DVD player		
0 hrs	9.7%	18.4%
1-2 hrs	3.5%	6.1%
3-4 hrs	0.7%	0.0%
5-6 hrs	0.0%	0.0%
Internet		
0 hrs	13.2%	18.3%
1-2 hrs	2.1%	6.1%
3-4 hrs	0.0%	0.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%
Other Forms		
0 hrs	11.8%	18.3%
1-2 hrs	1.4%	4.0%
3-4 hrs	0.0%	0.0%
5-6 hrs	0.0%	0.0%
7 hrs or more	0.0%	0.0%

Q8: Are there demographic differences in the amount of time parents and teachers spend interacting with children using "screen time" technology?

Hypothesis One

It was hypothesized that there would be demographic differences in the amount of time parents spent interacting with their children using technology. An ANOVA was conducted using demographic variables (education, income, gender) for parents as the independent variables and the time spent interacting with children using technology as the dependent variable to determine if differences in demographics exist in amount of time parents spend interacting with children using technology.

In terms of time spent interacting with children while they used technology per week, there was a significant main effect for income and the amount of time spent interacting with the children while using video gaming systems, (F (7, 20) = 2.75, p<.05), and Internet, (F (9, 19) = 2.81, p<.05). There was also significant main effect for education and the amount of time spent interacting with the parent using the internet, (F (5, 24) = 7.25, p<.05).

Analysis of the post hoc test revealed that parents who reported a family income between $40,000 and $100,000 spent more time interacting with children using video games and the Internet than parents with incomes less than $40,000 ($m$= 2.36, p = .01, d = 0.38). Parents who reported having a technical degree, a Bachelor's degree, or a Master's degree spent more time interacting with their children using the Internet than

parents who reported having less than a technical degree (m=1.53, p=.001, d= .75).When time spent interacting with children using technology was examined on a daily basis, there were significant main effects for education and the amount of time spent interacting with a parent using the internet, (F (5, 16) = 3.87, p<.05). Post Hoc could not be performed because there were not enough groups.

Hypothesis Two

It was hypothesized that there would be demographic differences in the amount of time teachers spent interacting with children using technology. An ANOVA was conducted using demographic variables (education, income, gender of the adult) for teachers as the independent variables and the time spent interacting with children using technology as the dependent variable to determine if differences in demographics exist in amount of time teachers spend interacting with children using technology. There were no significant effects found between the demographic variables (education, income, gender of the adult) and time spent interacting with children using technology.

Q9: What types of "screen time" technology are teachers and parents using in environments for young children (home, classroom)?

Descriptive statistics in the form of percentages are provided to offer data on the types of technology teachers and parents are using in environments for young children in the Table 10. More parents than teachers indicated using *Sesame Street* (21% of parents;

19% of teachers). Additionally, more teachers than parents reported using Mattel toys (11% of teachers; 8% of parents). More parents than teachers reported using Wii, the gaming console (16% of parents; 9% of teachers,). Interestingly, more teachers than parents reported using the Internet (60% of teachers; 40% of parents).

Table 10

Types of Technology Being Used by Parents at Home and Teachers in the Classroom (n=78 parents, 47 teachers)

Measures	Parents	Teachers
Sesame Street	21.4%	19.1%
Baby Einstein	8.7%	2.1%
Leap Frog	28.6%	27.7%
Mattel Toys	7.7%	10.6%
PlayStation	3.6%	0%
Xbox	2.6%	0%
Wii	15.8%	6.4%
Cell Phones	18.9%	8.5%
DVD players	35.2%	31.9%
Internet	40.3%	60.0%
Other (Magic School Bus, PBS)	20.9%	38.3%

Q10: Are there associations between the adult role and the types of "screen time" technology used in different settings (home and classroom)?

Hypothesis One

It was hypothesized that adult role would be associated with the types of technology used in settings with young children. For example, it is hypothesized that teachers may be associated with more educational types of technological experiences. To test this hypothesis, a Chi-square was conducted to determine if there is an association between the types of technology that parents and teachers use.

The analysis of the associations found there was an association between adult role and *Sesame Street*, (X^2=12.58, *df*= 3, p<.05), *Baby Einstein*, (X^2=8.99, *df*=3, p<.05), *Leap Frog*, (X^2=9.77, *df*=3, p<.05), Wii, (X^2 =14.69, *df*=3, p<.05), cell phones , (X^2=16.40,*df*=3, p<.05), and the Internet, (X^2 =8.08, *df*=3, p<.05).

Analysis of the residuals revealed that parents used *Sesame Street*, *Baby Einstein*, *Leap Frog*, Wii, and cell phones more than was expected at home and more than teachers use these technologies in the classroom. Teachers were found to use the Internet more than was expected in the classroom than parents use it at home.

Q11: What are teachers' and parents' perspectives of the purpose of "screen time" technology being used in environments for young children?

More teachers than parents agreed that "screen time" technology was helpful with encouraging reading skills at home (55% of teachers; 29% of parents). Additionally, more teachers than parents agreed that "screen time" technology helped with reading skills in the classroom (42% of teachers; 29% of parents). Interestingly, more teachers agreed that the use of "screen time" technology helped cognitive development (42% of teachers; 25% of parents). Similarly, more teachers agreed that "screen time" technology helped with technology knowledge (57% of teachers; 31% of parents). More teachers agreed that "screen time" technology help with identifying shapes in the classroom (42% of teachers; 30% of parents). In addition, more teachers agreed that "screen time" technology helped with identifying words in the classroom (40% of teachers; 30% of parents). Additional descriptive information is provided to offer data on the perspectives of teachers and parents about the purpose of technology in environments for young children in Table 11 and Table 12.

Table 11

Parents' and Teachers' Perspectives of the Purpose of "Screen Time" Technology at Home (*n*=78 parents, 47 teachers)

Measures	Parents	Teachers
Helps with reading skills	29.0%	55.0%
Helps with identifying words	29.0%	45.0%
Helps with identifying shapes	30.0%	47.0%
Helps with Writing skills	13.0%	15.0%
Helps with fine motor skills	21.0%	23.0%
Helps with social development	6.0%	6.0%
Helps with Cognitive Development	26.0%	43.0%
Helps with Language Development	26.0%	47.0%
Helps with Physical Development	4.0%	2.0%
Helps with Technological Knowledge	31.0%	57.0%
Helps with using a mouse	29.0%	47.0%
Helps with using a keyboard	30.0%	49.0%
Helps with turning on a computer	22.0%	28.0%
Helps with navigating a website	22.0%	34.0%
Helps with opening a word document	19.0%	26.0%
Helps with opening a webpage	20.0%	32.0%
I don't think "screen time" technology helps	4.0%	2.0%

Table 12

Parents' and Teachers' Perspectives of the Purpose of the "Screen Time" Technology in the Classroom (n=78 parents, 47 teachers)

Measures	Parents	Teachers
Helps with reading skills	29.0%	45.0%
Helps with identifying words	30.0%	40.0%
Helps with identifying shapes	31.0%	42.0%
Helps with Writing skills	15.0%	10.0%
Helps with fine motor skills	22.0%	17.0%
Helps with social development	10.0%	4.0%
Helps with Cognitive Development	26.0%	2.8%
Helps with Language Development	8%.0	36.0%
Helps with Physical Development	28.0%	0.0%
Helps with Technological Knowledge	31.0%	43.0%
Helps with using a mouse	31.0%	38.0%
Helps with using a keyboard	24.0%	38.0%
Helps with turning on a computer	24.0%	30.0%
Helps with navigating a website	19.0%	26.0%
Helps with opening a word document	22.0%	19.0%
Helps with opening a webpage	7.0%	28.0%
I don't think "screen time" technology helps	3.0%	11.0%

Q12: Is adult role associated with perspectives of the purpose of "screen time" technology being used in environments for young children?

Hypothesis One

It was hypothesized that adult role would be associated with perspectives of the purpose of "screen time" technology being used in environments for young children. To test this hypothesis, a Chi-square was conducted to determine if there is an association between adult role (parent, teacher) and perspectives of the purpose of technology being used in environments for young children.

The association of adult role and the ability to identify words at home was significant, (X^2 =9.27, df=3, p<.05), as was the ability to identify shapes at home, (X^2=8.59, df=3, p<.05). There was no significant association between adult role and perspectives of the purpose of "screen time" technology being used in the classroom. The analysis of the residuals showed that more teachers agreed using "screen time" technology at home helped with identifying words as well as identifying shapes more than would be expected by chance.

Summary

This chapter described the results of this quantitative study. Descriptive analyses along with the following tests were discussed: Chi-squares, ANOVAs, and MANOVAs. Research questions were revisited and the results for each of the questions were reported.

CHAPTER V

DISCUSSION

There is a paucity of research conducted on the perspectives of parents' and teachers' about school readiness and even less on the perspectives of parents' and teachers' on the role of "screen time" technology in preparing children for formal schooling. The purpose of this study was to fill those gaps by examining the perspectives of parents and teachers on the role of "screen time" technology in helping children develop school readiness skills and knowledge.

Parents' and Teachers' Perspectives of School Readiness

Of the sixteen items on the parent and teacher questionnaire addressing "readiness for kindergarten" and the three items addressing school readiness parents and teachers expressed different perspectives. Teachers felt counting to ten or more, recognizing half the letters of the alphabet, sharing toys, using pencils, possessing the ability to read one's own name, and using a computer mouse were more important for preparing children for formal schooling than parents did. These findings are similar to those of Wright, Diener, and Kay (2000), who found that some teachers expected children to have interest in, and familiarity with, the alphabet while others wanted children to know the alphabet and how to write the letters. In addition, some also thought

children should have basic math skills such as the ability to recognize the numbers 1-10 and to count from 1 to 10 (Wright et al., 2000).

The finding that teachers reported most of the items important is contradictory to a previous study that found the percentage of parents who rated counting and knowing the alphabet as very important were six to eight times greater than those of teachers (Lin et al. 2003). This difference may be due to the fact that teachers and parents have a different knowledge of what is needed to be successful in school. The difference in knowledge could cause parents to concentrate on areas of skills and knowledge that they feel is necessary, where teachers might concentrate on other areas of skills and knowledge, like learning the whole alphabet instead of learning just half of the letters. Teachers in this sample concentrated more on the abilities and knowledge of the children, whereas past research indicated that teachers concentrated more on the social demands and behavior in the classroom than academic skill development (Lin et al., 2003).

In a Zhang, Sun, and Gai's (2008) study parents wanted their children to be able to understand and follow instructions, along with the ability to interact with teachers. Parents cited frustration tolerance, independence, sitting still and interaction with teachers as the most important qualifications their children should possess (Zhang et al., 2008). Kindergarten teachers thought manipulation skills, self-control, moral awareness and compliance with authority was fundamental.

In the current study, it was found that parents emphasized counting to 20 or more was necessary for success in school where teachers emphasized counting to 10 or more was necessary. These different perspectives in what is important for children to succeed in formal schooling may cause children to be left behind in the classroom due to a disconnect between expectations.

Parents' and Teachers' Perspectives of the Role of "Screen Time" Technology on School Readiness

Interestingly, just as the perspectives of what is necessary for formal schooling were different between parents and teachers, so were their perspectives on the role of "screen time" technology on children's readiness for formal schooling. Teachers expressed that the use of "screen time" technology can help with reading, as well as language and cognitive development, a finding in contradiction to the professional position statement of Cordes and Miller (2000), who argued that technology is physically, socially, and intellectually detrimental to children. These results are also contradictory to the perspectives of Jane Healy (2007) who concluded that computers can be harmful to normal development. The American Academy of Pediatrics (1999) recommends no screen time for children under the age of two and to limit the amount of screen time to two hours of quality programming for children over the age of two. It is clear that this message is not reaching many of the parents in this sample.

In her book, Guernsey (2007), interviewed parents who found it easy to follow the recommendations of no screen time for children before the age of two but found it difficult to follow the recommendation of limiting screen time to two hours of quality screen time for children older than two. It is difficult for parents to navigate between the developmental recommendations and the prevalence of the "screen time" technology in society. Used appropriately, technology can be a valuable learning tool for preschoolers. In one trial, results indicated a positive relationship between the preschoolers' computer use and their performance on school readiness and cognitive tests (Li, Atkins, & Stanton, 2006).

Differences Between Parents' and Teachers' Perspectives of the Role of "Screen Time" Technology on School Readiness

This study also investigated the difference between parents' and teachers' perspectives of the role of screen time technology on school readiness predicting three hypotheses: 1) there would be differences between parents and kindergarten teachers, 2) there would be differences between preschool teachers and kindergarten teachers, and 3) there would be no difference between parents' and preschool teachers' perspectives of the role of "screen time" technology on school readiness. Due to small cell sizes for each category of teacher (preschool, kindergarten, and first grade), teachers were combined into one category.

Significant differences between teachers and parents were few. This could be due to small sample sizes for teachers. However, an analysis of the means of both parents and teachers revealed agreement on technology helping with reading, recognizing shapes, recognizing words, writing skills, language and cognitive development. They did differ on technology helping with fine motors skills and social development. Teachers indicated that technology can help with fine motor skills and parents did not. This could be due to children using the Internet in the classroom more than at home. The use of the keyboard and mouse require fine motor skills just as writing does. Parents indicated that technology helps with social development more than teachers did. This could be due to parents' perception on how they themselves use technologies in social networking. Since they may use technology to connect with family and friends, parents may think their young children use technology in the same capacity. Future research should investigate this finding that parents view "screen time" as influential to social development in young children to determine what aspects of "screen time" parents feel assists with social development in children under six years of age. Additionally, with a larger sample size, increased power may have increased the ability to detect significant differences.

There is research on parent and teacher perspectives on school readiness but very little on their perspectives on the role "screen time" technology plays in developing skills to be successful in formal school. There is a preponderance of research on the role of screen time on cognitive development, social development (Hair, Halle, Terry-Humen,

Lovelle, & Calkins, 2006; Lapointe, Ford, & Zombro, 2007), language development, and physical development (Fantuzzo, Bulotsky-Shearer, Fusco, & Wayne, 2005; Pyle, Bates, Greif, & Furlong, 2005). There is research on how computers, video games, the Internet have influenced children's academics (Hair, Halle, Terry-Humen, Lovelle, & Calkins, 2006; Rocheleau, 1995) but little research on the perspectives of the parents and teachers who use the technology.

Time Sent Using "Screen Time" Technology at Home and in the Classroom

Using a MANOVA to analyze the data revealed that there were no significant differences in the time spent using "screen time" technology at home or in the classroom. However, looking at the descriptive analysis reveals that computers, educational TV/video, educational games, DVD players, Internet, and other forms were all reported to be used more in the classroom than at home. The mean differences did show that parents spent more time interacting with their children using educational TV/video at home than teachers do in the classrooms. This difference could be a result of parents having more opportunity to interact with their children at home than teachers do in the classroom. The use of educational TV/video more at home than in the classroom could be a result of the fact that shows like *Sesame Street* or networks like PBS can be watched more easily at home than at schools that may have curriculum or licensing regulations imposing limits on the amount of television programming children may be exposed to while in the educational setting. *Sesame Street* has been on television since 1968,

teaching children to behave, learn numbers, and the alphabet. The use of *Sesame Street* or programming television like PBS may influence parents to use educational TV/video to help their children learn basic school readiness skills (Georgetown University, 2000).

Conversely, the structure of the classroom could be an influence on what types of technology is used and the amount of time teachers and students are able to use them. In the current study, the use of the Internet was reported to be used more in the classroom than at home. This may reflect the fact that computers and the Internet can be used in conjunction with lessons and classroom enrichment activities than the other choices for "screen time" technologies.

Demographic Differences in the Amount of Time Children Spend Using "Screen Time" Technology at Home and in the Classroom

The only demographic variable that indicated significance in this sample in terms of the amount of time children spent using "screen time" technology was parental education. Parents, who reported having a college degree or higher, indicated that their children spent more time using "screen time" technology than parents who indicated having a high school education as the highest level achieved. This could be explained from a vantage point of *resources*-- parents with a college education may have more resources to provide "screen time" technology to their children. This could also be explained as *time management*--they may also have more obligations outside of the home that would encourage them to use a variety of "screen time" technologies like educational

TV/Video, educational games, and video gaming systems to keep their children busy while they meet other obligations in the home or for work. A final possible conclusion may have to do with *knowledge*-- parents with a college education may have more knowledge about what "screen time" technology is needed to help children develop the skills and knowledge to be ready for formal schooling. Parents are very conscious of the wide range of media and the growth of digital media available for children. The amount of time children spend using "screen time" technology is supported by Piaget's three assumptions: children construct their own knowledge in response to their experiences, children learn many things on their own without intervention of older children or adults, and children are intrinsically motivated to learn and do not need rewards from adults to motivate learning (Piaget, 1952).

Future research should continue to investigate the possible influence parental education may have on children's "screen time" exposure and the reasons parents provide the technologies. Previous studies have found that income was a more powerful contributor to children's vulnerability at school entry than parental education (Janus & Duku, 2007), a finding in contradiction to other literature that suggests maternal education accounts for more variation in children's outcomes than income (Shonkoff & Philips, 2000). The current study supports Shonkoff and Philips' finding that education may be more influential on children's outcomes than income alone. Education may be more of an influential factor because well-educated parents may be more likely to utilize

appropriate parenting strategies, regardless of their income level, than parents who are less educated (Shonkoff & Phillips, 2000).

There was no effect found between other demographic variables investigated and the time spent using "screen time" technology in the classroom. This could be due to the low number of teacher participants in the study or due to differences in teachers' individual pedagogies.

Demographic Differences in the Amount of Time Parents and Teachers Spend Interacting with Children Using "Screen Time" Technology

This study also investigated the demographic differences in the amount of time parents and teachers spend interacting with children using "screen time" technology predicting two things: 1) There would be differences between demographics (education, income, and the gender of the adult) and the amount of time parents spend interacting with children using technology; and 2) There would be differences between demographics (education, income, and the gender of the adult) and the amount of time teachers spend interacting with children using technology.

Indeed, there were differences found between income and the amount of time spent using video gaming systems and the internet. Parents who reported a family income between $40,000 and $100,000 spent more time interacting with children using video games and the Internet than parents with incomes less than $40,000. There were also differences found between education and the amount of time spent using the Internet with

parents on a weekly basis. This finding offers additional support for the findings of Shonkoff and Philips (2000) that education may be more influential to children's outcomes than income alone.

When time spent interacting with children using technology was examined on a daily basis, there were differences found between education and the amount of time spent interacting with a parent using the Internet, and age and the amount of time spent interacting with a parent using video gaming systems. It is not surprising that if the parental education makes a difference with the amount of time spent using the Internet on a weekly basis, it would make a difference with the amount of time spent on a daily basis. When the amount of time spent interacting with a parent and using video gaming systems was analyzed, it was found that three-, four-, and five-year-olds spent more time interacting with a parent using video gaming systems than six–year-olds. An explanation could be three-, four-, and five –year- olds are still developing their fine motor skills and their hand eye coordination, so they would require more assistance to successfully navigate the screen world. This can be explained using Vygotsky's Zone of Proximal Development, in that the child's skills that are in the process of maturing can be accomplished only with the assistance of a more skilled person (Vygotsky, 1978). Another explanation could be because increasingly more games are geared to younger age groups to help develop reading, writing, and arithmetic skills. According to Bronfenbrenner (2005), understanding the environmental systems, and the interaction

between them, is vital to understanding human behavior and development. A child's development is determined by what he or she experiences in the settings they spend time in.

Types of "Screen Time" Technology Being Used at Home and in the Classroom

Parents reported using *Sesame Street*, *Baby Einstein*, Wii, *LeapFrog*, and cell phones while teachers reported using the Internet more. The current study support the finding by Johnson (2009) that 83% of families reported home Internet access and of those, almost 90% indicated that children used the Internet at home and all of the children reported using the Internet at school

Teachers' and Parents' Perspectives of the Purpose of "Screen Time" Technology Being Used

Teachers were found to indicate that "screen time" technology is helpful with reading skills, cognitive development, technology knowledge, and identifying words. Parents did indicate that "screen time" technology is helpful with physical development, which is contradictory with the research that reports technology hinders physical development and is one of the main contributors to childhood obesity (USDA, 2001) This may be due to the advancement of the "screen time" technology being used at home. The video gaming systems Wii and Xbox are allowing children to dance with the characters on the screen; this may be the reason why parents indicated that the "screen time" technologies help with physical development.

Limitations

While this study had several strengths, it contained significant limitations as well. A larger sample size might have provided the power necessary to detect significant differences between groups. The small number of teachers completing the questionnaire limits the generalizability of the findings, as well as decreases the power of the statistical analyses. Significant differences may exist, but the small number of teachers in the sample prevented these from coming to light. Additionally, a large number of teachers did not indicate the age group they taught. This could have been an oversight, or some teachers may have completed the survey who taught older or younger children. For these reasons, the teacher results should be interpreted with extreme caution. Future research should continue to investigate differences in the perspectives of teachers of different age groups and parents in regard to the usefulness of "screen time" to school readiness.

Another limitation for this study was the researcher never asked if the teachers even used technology in the classroom. If they did not, that may have also influenced the low number of teachers that responded to the questionnaire. The researcher also did not include race/ethnicity as a demographic variable. Future research should explore whether teachers use technology or not in their classroom. Future research should also consider including race/ethnicity as one of the demographic variable to determine if individuals of different ethnic backgrounds influences their perspectives on the role of "screen time" on school readiness. In addition, there was a lack of school demographics considered in this

study. For example, Title 1 status, free or reduced lunch percentages, and other similar information may have been useful in further investigating the influence of resources available to the teachers on their perspectives on the usefulness of technology in the classroom. Future research should include school demographics when determining what other variables could influence teachers' perspectives on the use of "screen time" technology in the classroom.

Implications

Despite these limitations, this study adds to the current research in several ways. The strengths of this study are that the results did offer some insight into what parents and teachers think is necessary for children to be prepared for formal schooling. This study also offered insight into what "screen time" technologies parents and teachers are using with children and how much time those technologies are actually being used on a weekly and daily basis. The current study did fill in a gap about the perspectives of parents' and teachers' on the role of "screen time" technology that was missing in the literature along with the types of technology is being used. This study offered insight into how much time teachers and parents are interacting with their children using the technologies that are available to them and their children.

The results of this study were supported by the theoretical perspectives of Urie Bronfenbrenner, Jean Piaget, and Lev Vygotsky. This researcher concentrated on the microsystem and the mesosystem of Bronfenbrenner's theory. In the microsystem, an

individual helps construct the settings and are not passive learners. The interaction between the children with their parents and their teachers is part of the mesosystem, which consists of relationships and interactions between family and school as well as the relation of family experiences to school experiences. Relationships have impact in two directions-both away from the child and toward the child (Addison, 1992). Jean Piaget posited that children construct knowledge independently through their experiences with the world. Children need direct experiences and active involvement in their world through exploration and play. The use of "screen time" technologies may be able to help children explore their worlds more. Finally, Lev Vygotsky's theory involves the use of a More Knowledgable Other (MKO) as well as the Zone of Proximal Development (ZPD). These two concepts help explain the use of interactions between the parents, teachers, and the child in their use of "screen time" technology in preparation for formal school entry.

The results of this study also generated new knowledge about parents' and teachers' perspectives of the role of "screen time" on school readiness. This study also offers information about what types of "screen time" technology teachers are using in their classrooms and what types of "screen time" technology parents are using themselves, as well as letting their children use at home to prepare them for formal schooling. Additionally, this study reveals differences in perspectives parents and teachers have on what prepares children for formal schooling, as well as their

perspectives on how technology can be useful to children's school readiness. The knowledge gained from this study may help educators in preparing their curriculum to include "useful" technology. The information will also help parents in preparing their young children for school readiness with the help of "useful" technology.

The results of this study may be used to show teachers what type of "screen time" technology can be used in their classrooms to help prepare their young learners for formal schooling. For instance, the use of educational software, as well as using more educational TV/video for reading and cognitive development, may be technologies that teachers wish to incorporate into their curriculum more and more. The findings of this study may also be used to help teachers prepare their students' parents on using technology at home to enhance their children's learning throughout the school years by communicating with the parents the skills and knowledge the teachers are looking for when a student enters his/her classroom. Furthermore, this study may provide information to help parents find out what skills and knowledge teachers identify as being necessary for formal schooling.

Future research should continue to look at the perspectives of parents and teachers and the influence of "screen time" technology on cognitive, social, language, and physical development. Additionally, future research should explore the difference between teachers' and parents' perspectives on what is necessary for children to be prepared for formal schooling, as well as exploring what specific skills and knowledge

teachers and parents view as important for school readiness, with larger and more diverse samples. This information could be used by preschool teachers and parent educators to help parents understand what skills kindergarten teachers expect children to have when they enter school, and what skills seem to predict the most success in the formal school environment.

Future research should also continue to explore which qualities parents view as beneficial to development about "screen time" and how they feel these activities influence school readiness skills. Furthermore, future research should further investigate how video gaming systems may help children become more active than just sitting in front of the TV or sitting in the bedroom playing video games, while also examining what characteristics of "screen time" technology cause parents to feel that they encourage physical development of young children. The pedagogy of teachers was beyond the scope of the current study but is something that future research should investigate to determine if the way teachers conduct their lessons and view their role as educator could influence the time spent using "screen time" technology in their classrooms. Future research should also continue to explore the many different types of technology being used by parents and teachers, as well as the influence each of them have on school readiness itself by using measures of school readiness and/or academic achievement as a part of the methodology.

Companies are making advancements in technology every day and many of these advancements are geared toward getting parents to buy products to help their children succeed in school. This study, along with future studies, may help with giving parents and teachers the knowledge about how "screen time" technologies can help their students gain the skills and knowledge to succeed in formal schooling. Just as technology keeps advancing so should the research continue to look and explore the new "screen time" technologies being used to influence children's minds and bodies.

Summary

This chapter described the discussion of the findings of the current study. The strengths and weaknesses were also described. Furthermore, the implications for parents and teachers along with suggestions for future research were presented in this chapter.

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APPENDIX A

Parents' Perspectives of the Role of Screen Time on Children's School Readiness Questionnaire

Parents' Perspectives of the Role of Screen Time on Children's School Readiness Questionnaire

Texas Woman's University

PARENT QUESTIONNAIRE

I am interested in finding out more about parents' perceptions of the role of technology has in their child's preparation for school entry. The attached questionnaire includes questions about your background, your use of technology in the home, and your perception of the use of technology in the classroom as well as the role technology has in children preparing for school entry. Please answer the only the questions you feel comfortable responding to, knowing that your responses are anonymous. **Please keep in mind that the return of your completed questionnaire constitutes your informed consent to act as a participant in this research.** This questionnaire will take you about 5-10 minutes to complete and is completely voluntary and anonymous. No identifying information will be requested and your response will be stored in a secure online database that only the researchers can access. Should you have any questions about the study, please contact one of the researchers (see below). The information you provide to us is very important. We are grateful for your time.

Sheryl Alden, (shalden@twu.edu)
Katherine Rose, (krose1@twu.edu)

GENERAL INSTRUCTIONS

Some of the questions in this survey ask you to write in your response. There will be a blank where you can type your response.

For the other questions, simply answer by clicking on a single letter to the left of the short list of answers. When answering these questions if there is other children in the home please think about our youngest child.

SECTION ONE

This first section of the questionnaire asks about your background and who you are.

1) What is your gender?
   a. Male

b. Female

2) Are you employed?
   a. Yes
   b. No (if no go to number 5)

3) What is your employment status?
   a. Part-time
   b. Full-time

4) How many hours a week do you work?
   a. < 30
   b. 30-35
   c. 40
   d. 40 >

5) What is your ethnic background?
   a. Caucasian
   b. African-American
   c. Hispanic
   d. Asian
   e. Other

6) What city and state do you live in?

_____

7) What is the highest level of education you have completed?
   a. Some high school
   b. High school/GED
   c. Some college
   d. Associates/Technical degree
   e. Bachelor's Degree
   f. Some post-graduate work
   g. Master's Degree
   h. Doctorate Degree

8) What type of occupation do you have?
   a. Home school Parent
   b. Mechanical
   c. Technical
   d. Clerical
   e. Education
   f. Managerial
   g. Community/Social Services
   h. Architecture/Engineering
   i. Entertainment/Sports
   j. Healthcare
   k. Restaurant
   l. Sales
   m. Office and Administrative
   n. Other- Please indicate in the lines provided

_____

SECTION TWO

This section contains questions about your youngest child's preschool program.

9) Do you have a child in your home between ages of 3 and 6?
   a. Yes
   b. No

10) What is the age of the youngest child that you have between 3 and 6?
   a. 3
   b. 4
   c. 5
   d. 6

11) What is the gender of this child?
   a. Male
   b. Female

12) Does/Did your youngest child between 3 and 6 attend a preschool program?

a. Yes
b. No

13) What type of preschool environment did/does your youngest child between 3 and 6 participate in?

a. Full time child care program
    i. Home based
    ii. Center based
b. Part time child care program
    i. Home based
    ii. Center based
c. Part-time nursery school or preschool program
    i. Home based
    ii. Center based
d. Pre-K through a school district
    i. Center based
e. Pre-K through Head Start
    i. Center based
f. Pre-K through some other program: please indicate what kind
    i. Home based
    ii. Center based

SECTION THREE

This section contains questions about your idea of school readiness.

14) Please tell us what you think when you hear the term "school readiness"?

15) Which one of these is important for "ready for kindergarten"? (Mark all that apply)

a. Can count to 10 or more
b. Can count to 20 or more
c. Can recognize half the letters of the alphabet
d. Can recognize all the letters of the alphabet
e. Can share toys with other children
f. Can use pencils to write letters
g. Can use paint brushes to draw pictures
h. Can sit still and pay attention
i. Can read own name
j. Can identify colors
k. Can identify feelings
l. Can identify shapes
m. Can identify five senses
n. Can identify animal parts
o. Can create stories
p. Can identify places on campus/ at home and describe their general location
q. Can use a computer mouse
r. Can use a keyboard
s. Can turn on a computer
t. Can navigate on a website
u. Can open a word document
v. Can open a webpage

16) Which one of these is important for school readiness? (Mark all that apply)

a. Ability to Read
b. Ability to Write
c. Math abilities
d. Ability to use computer mouse
e. Ability to use a keyboard
f. Ability to turn the computer on
g. Ability to navigate on a website
h. Ability to open a word document

i. Ability to open a webpage

SECTION FOUR

This section contains questions about your idea of the role of "screen time" on school readiness in your home and in the classroom.

17) How do you define "screen time"?

_____

_____

18) What do you think of when you hear about "screen time for children"?

_____

_____

(For the purpose of this questionnaire screen time will be defined as the amount of time individuals spends in front of screens; examples include TV, computers, cell phones, watching videos/DVDs.)

SECTION FIVE

This section contains questions about how you feel about and use technology in your own life.

19) For the following questions please indicate your level of agreement with each statement:

	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
When a new technical tool/gadget comes out, I rush					

out to buy it					
When a friend/family needs help with a technological tool/gadget, I am the first person they call					
When I buy a new technological tool/gadget I get the top of the line					

SECTION SIX

This section contains questions about what types of screen time tools your use in your home and your idea of the role of "screen time" on school readiness in your home and in the classroom.

20) What types of "screen time" do you use in your home? (Mark all that apply)

a. Sesame Street
b. Baby Einstein
c. LeapFrog
d. Mattel Toys
e. Playstation
f. Xbox
g. Wii
h. Cell phones
i. DVD players
j. Internet
k. Other Please indicate in the line provided

_____

21) For the following question please indicate your level of agreement with each statement:

	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
Computer and other technological tools are a useful tool to help children develop school					
Educational TV/Videos/Gaming Systems are a useful tool to help children develop school readiness skills					
Video gaming systems/cell phones/ DVD players are a useful tool to help children develop school readiness skills					
Internet is a useful tool to help					

children develop school readiness skills					
Technology should be used in the classroom					
DVD players					
Internet					
Other forms					

22) For the following question please indicate your level of agreement with each statement:

	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
My youngest child between 3 and 6 attention span is too short.					
My youngest child between 3 and 6 attention span is long.					
My youngest child between 3 and 6 attention					

span is normal for his/her age.					
I think screen time has contributed to my youngest child between 3 and 6 level of attention span.					

23) For the following question please indicate your level of agreement with each statement:
(For the purpose of this questionnaire physical skills will be defined as running, jumping, walking, writing, reading, etc.)

	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
My youngest child between 3 and 6 physical skills are normal for his/her age.					
My youngest child between 3 and 6 physical skills are not where they should be.					

My youngest child between 3 and 6 needs to participate in more outside activities to increase physical abilities.					
I think screen time has contributed to my youngest child between 3 and 6 level of physical skills.					

24) For the following question please indicate your level of agreement with each statement:

	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
My youngest child between 3 and 6 health is normal for his/her age.					

My youngest child between 3 and 6 is sick all the time.					
My youngest child between 3 and 6 has seen the doctor a lot this past year.					
I think screen time has contributed to my youngest child between 3 and 6 level of health.					

25) For the following question please indicate your level of agreement with each statement:

	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree

My youngest child between 3 and 6 is considered to have a normal weight.					
My youngest child between 3 and 6 has been told to lose weight.					
My youngest child between 3 and 6 has been told to gain weight.					
I think screen time has contributed to my youngest child between 3 and 6 level of weight.					

26) For the following questions please indicate the number of hours a week your youngest child between 3 and 6 spends using each of the following:

	Alone	With me	With another Adult	With peers/siblings
Computers				
Educational TV/ Videos				
Educational Games on Computer				
Video Gaming Systems				
Cell Phones				
DVD players				
Internet				
Other forms				

27) For each of the following questions please indicate how many hours a day your youngest child between 3 and 6 spends using each of the following:

	Alone	With me	With another Adult	With peers/siblings
Computers				
Education TV/ Videos				
Educational Games on Computer				
Video Gaming Systems				

Cell Phones				
DVD players				
Internet				
Other forms				

28) What types of "screen time" do you think could be used to help children prepare for school?

_____

_____

29) Tell us a bit about your feelings as to whether or not you feel that schools should use more "screen time" in the classroom?

_____

_____

30) What types of "screen time" would you like to see used more in the classroom? (Mark all that apply)

a. Sesame Street
b. Baby Einstein
c. LeapFrog
d. Mattel Toys
e. Playstation
f. Xbox
g. Wii
h. Cell phones
i. DVD players
j. Internet
k. Other Please indicate in the line provided

_____

SECTION SEVEN

Children can sometimes accomplish more with the help of a more competent peer or adult. This section contains questions to find out if parents think screen time can function in this way as well.

31) What purpose do you think "screen time" serves in the classroom? (Mark all that apply)

a. Helps with reading skills
b. Helps identify words
c. Helps identify shapes
d. Helps with writing skills
e. Helps with fine motor skills
f. Helps with social development
g. Helps with cognitive development
h. Helps with language development
i. Helps with physical development
j. Helps with technological knowledge
k. Helps with using a computer mouse
l. Helps with using a keyboard
m. Helps with using a Can turn on a computer
n. Helps with navigating on a website
o. Helps with opening a word document
p. Helps with opening a webpage
q. I do not think "screen time" serves any purpose in the classroom

32) What purpose do you think "screen time" serves at home? (Mark all that apply)

a. Helps with reading skills
b. Helps identify words
c. Helps identify shapes
d. Helps with writing skills
e. Helps with fine motor skills
f. Helps with social development
g. Helps with cognitive development
h. Helps with language development

i. Helps with physical development
j. Helps with technological knowledge
k. Helps with using a computer mouse
l. Helps with using a keyboard
m. Helps with using a Can turn on a computer
n. Helps with navigating on a website
o. Helps with opening a word document
p. Helps with opening a webpage
q. I do not think "screen time" technology serves any purpose at home

SECTION EIGHT

This section contains questions about your youngest child between 3 and 6 abilities.

33) My your youngest child between 3 and 6 can: (Mark all that Apply)

a. Can count to 10 or more
b. Can count to 20 or more
c. Can recognize half the letters of the alphabet
d. Can recognize all the letters of the alphabet
e. Can share toys with other children
f. Can use pencils to write letters
g. Can use paint brushes to draw pictures
h. Can sit still and pay attention
i. Can read own name
j. Can identify colors
k. Can identify feelings
l. Can identify shapes
m. Can identify five senses
n. Can identify animal parts
o. Can create stories
p. Can identify places on campus/ at home and describe their general location
q. Can use a computer mouse
r. Can use a keyboard
s. Can turn on a computer
t. Can navigate on a website

u. Can open a word document
v. Can open a webpage

SECTION NINE

This section contains questions about your family income.

34) What is the average yearly income from all sources, for your family?

a. Below $5,000
b. $5,001-$9,999
c. $10,000-$19,999
d. $20,000-$29,999
e. $30,000-$39,999
f. $40,000-$49,999
g. $50,000-$59,999
h. $60,000-$69,999
i. $70,000-$79,999
j. $80,000-$89,999
k. $90,000-$99,999
l. Over $100,000

APPENDIX B

Teachers' Perspectives of the Role of Screen Time on Children's School Readiness Questionnaire

Teachers' Perspectives of the Role of "Screen Time" on Children's School Readiness
Texas Woman's University

Teacher QUESTIONNAIRE

I am interested in finding out more about teachers' perceptions of the role of technology has in children's preparation for school entry. The attached questionnaire includes questions about your background, your use of technology in the classroom, and your perception of the use of technology in the classroom as well as the role technology has in children preparing for school entry. Please answer the only the questions you feel comfortable responding to, knowing that your responses are anonymous. **Please keep in mind that the return of your completed questionnaire constitutes your informed consent to act as a participant in this research.** This questionnaire will take you about 5-10 minutes to complete and is completely voluntary and anonymous. No identifying information will be requested and your response will be stored in Psych Data, a secure online database that only the researchers can access. Should you have any questions about the study, please contact one of the researchers (see below). The information you provide to us is very important. We are grateful for your time.

Sheryl Alden, (shalden@twu.edu)
Katherine Rose, (krose1@twu.edu)

GENERAL INSTRUCTIONS

Some of the questions in this survey ask you to write in your response. There will be a blank where you can write your response.

For the other questions, answer them by clicking on a single letter to the left of the short list of answers.

SECTION ONE

This first section of the questionnaire asks about your background and who you are.

1) What is your gender?
   a. Male

b. Female

2) What is your job title?
   a. Preschool teacher
   b. Kindergarten Teacher
   c. First Grade Teacher
   d. Home School Teacher

3) What is your employment status?
   a. Part-time
   b. Full-time

4) How many hours a week do you work?
   a. < 30
   b. 30-35
   c. 40
   d. 40 >

5) What is your ethnic background?
   a. Caucasian
   b. African-American
   c. Hispanic
   d. Asian
   e. Other

6) What is the highest level of education you have completed?
   a. Some high school
   b. High school/GED
   c. Some college
   d. Associates/Technical degree
   e. Bachelor's Degree
   f. Some post-graduate work
   g. Master's Degree
   h. Doctorate Degree

7) How many years have your been in your current position?

a. 0
b. 1-2
c. 3-4
d. 5-6
e. 7-8
f. 9-10
g. >10

8) How many years have your been teaching?

a. 0
b. 1-2
c. 3-4
d. 5-6
e. 7-8
f. 9-10
g. >10

9) What age group do you teach?

a. 3-4
b. 4-5
c. 5-6
d. 6-7

SECTION TWO

This section contains questions about your idea of school readiness in the classroom.

10) Please tell us what you think when you hear the term "school readiness"?

_____

11) Which one of these is important for "ready for kindergarten"? (Mark all that apply)

a. Can count to 10 or more
b. Can count to 20 or more
c. Can recognize half the letters of the alphabet
d. Can recognize all the letters of the alphabet
e. Can share toys with other children
f. Can use pencils to write letters
g. Can use paint brushes to draw pictures
h. Can sit still and pay attention
i. Can read own name
j. Can identify colors
k. Can identify feelings
l. Can identify shapes
m. Can identify five senses
n. Can identify animal parts
o. Can create stories
p. Can identify places on campus/ at home and describe their general location
q. Can use a computer mouse
r. Can you a keyboard
s. Can turn on a computer
t. Can navigate on a website
u. Can open a word document
v. Can open a webpage

12) Which one of these is important for school readiness? (Mark all that apply)

a. Ability to Read
b. Ability to Write
c. Math abilities
d. Ability to use computer mouse
e. Ability to use a keyboard
f. Ability to turn the computer on
g. Ability to navigate on a website
h. Ability to open a word document

i. Ability to open a webpage

SECTION THREE

This section contains questions about your idea of the role of "screen time" technology on school readiness in the classroom.

13) How do you define "screen time"?

---

14) What do you think of when you hear about "screen time for children"?

---

15) For the following questions please indicate your level of agreement with each statement:

	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
When a new technical tool/gadget comes out, I rush out to buy it					
When a friend/family needs help with a technological tool/gadget, I am the first person they call					
When I buy a new					

technological tool/gadget I get the top of the line					

16) What types of "screen time" technology do you use in your home? (Mark all that apply)

a. Sesame Street
b. Baby Einstein
c. LeapFrog
d. Mattel Toys
e. Playstation
f. Xbox
g. Wii
h. Cell phones
i. DVD players
j. Internet
k. Other Please indicate in the line provided

_____

_____

17) For the following questions please indicate your level of agreement:

	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
Computers and other technological tools are a useful tool to help children develop school readiness skills					
Educational TV/videos are a useful tool to help children develop school readiness skills					

Educational game are a useful tool to help children develop school readiness skills					
Video gaming system are a useful tool to help children develop school readiness skills					
Cell phones are a useful tool to help children develop school readiness skills					
DVD players are a useful tool to help children develop school readiness skills					
Internet is a useful tool to help children develop school readiness skills					
Technology should be used in the classroom					

18) For the following question please indicate your level of agreement with each statement:

	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
Computers have affected the attention span of the children in my classroom					
Educational TV/ Videos has affected the attention span of the children in my classroom					
Educational games on the					

computer have affected the attention span of the children in my classroom					
Video Gaming systems have affected the attention span of the children in my classroom					
Cell Phones have affected attention span of the children in my classroom					
DVD players have affected the attention span of the children in my classroom					
Internet has affected my youngest the attention span of the children in my classroom					

19) For the following question please indicate your level of agreement with each statement:

	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
Computers have affected the physical skills of the children in my classroom					
Educational TV/ Videos has affected the physical skills of the children in my classroom					
Educational games on the computer have affected the					

physical skills of the children in my classroom					
Video Gaming systems have affected the physical skills of the children in my classroom					
Cell Phones have affected the physical skills of the children in my classroom					
DVD players have affected the physical skills of the children in my classroom					
Internet has affected the physical skills of the children in my classroom					

20) For the following question please indicate your level of agreement with each statement:

	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
Computers have affected the health of the children in my classroom					
Educational TV/ Videos has affected the health of the children in my classroom					
Educational games on the computer have affected the					

health of the children in my classroom					
Video Gaming systems have affected the health of the children in my classroom					
Cell Phones have affected the health of the children in my classroom					
DVD players have affected the health of the children in my classroom					
Internet has affected the health of the children in my classroom					

21) For the following question please indicate your level of agreement with each statement:

	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
Computers have affected the weight of the children in my classroom					
Educational TV/ Videos has affected the weight of the children in my classroom					
Educational games on the computer have affected the weight of the children in my classroom					

Video Gaming systems have affected the weight of the children in my classroom					
Cell Phones have affected the weight of the children in my classroom					
DVD players have affected the weight of the children in my classroom					
Internet has affected the weight of the children in my classroom					

22) For the following questions please indicate the number of hours a week the children in your classroom spend using each of the following:

	Alone	With me	With another Adult	With peers/siblings
Computers				
Educational TV/ Videos				
Educational Games on Computer				
Video Gaming Systems				
Cell Phones				
DVD players				
Internet				

Other forms				

23) For each of the following questions please indicate how many hours a day the children in your classroom spend using each of the following:

	Alone	With me	With another Adult	With peers/siblings
Computers				
Education TV/ Videos				
Educational Games on Computer				
Video Gaming Systems				
Cell Phones				
DVD players				
Internet				
Other forms				

24) What types of "screen time" technology do you think could be used to help children prepare for school?

_____

25) Tell us a bit about your feelings as to whether or not you feel that schools should use more "screen time" technology in the classroom?

_____

_____

26) What types of "screen time" technology would you like to see used more at home? (Mark all that apply)

a. Sesame Street

b. Baby Einstein
c. LeapFrog
d. Mattel Toys
e. Playstation
f. Xbox
g. Wii
h. Cell phones
i. DVD players
j. Internet
k. Other Please indicate in the line provided

_____

_____

27) What purpose do you think "screen time" technology serves in the classroom? (Mark all that apply)

a. Help with reading skills
b. Help identify words
c. Help identify shapes
d. Help with writing skills
e. Help with fine motor skills
f. Help with social development
g. Help with cognitive development
h. Help with language development
i. Help with physical development
j. Help with technological knowledge
k. Help with using a computer mouse
l. Help with using a keyboard
m. Help with using a Can turn on a computer
n. Help with navigating on a website
o. Help with opening a word document
p. Help with opening a webpage
q. I do not think technology serves any purpose in the classroom

28) What purpose do you think "screen time" technology serves at home? (Mark all that apply)

a. Help with reading skills

b. Help identify words
c. Help identify shapes
d. Help with writing skills
e. Help with fine motor skills
f. Help with social development
g. Help with cognitive development
h. Help with language development
i. Help with physical development
j. Help with technological knowledge
k. Help with using a computer mouse
l. Help with using a keyboard
m. Help with using a Can turn on a computer
n. Help with navigating on a website
o. Help with opening a word document
p. Help with opening a webpage
q. I do not think technology serves any purpose at home

SECTION FIVE

This section contains questions about the abilities of the children in your classroom.

29) The children in my classroom can: (Mark all that Apply)

a. Can count to 10 or more
b. Can count to 20 or more
c. Can recognize half the letters of the alphabet
d. Can recognize all the letters of the alphabet
e. Can share toys with other children
f. Can use pencils to write letters
g. Can use paint brushes to draw pictures
h. Can sit still and pay attention
i. Can read own name
j. Can identify colors
k. Can identify feelings
l. Can identify shapes

m. Can identify five senses
n. Can identify animal parts
o. Can create stories
p. Can identify places on campus/ at home and describe their general location
q. Can use a computer mouse
r. Can you a keyboard
s. Can turn on a computer
t. Can navigate on a website
u. Can open a word document
v. Can open a webpage

SECTION SIX

This section contains questions about your family income.

30) What is the average yearly income from all sources, for your family?

a. Below $5,000
b. $5,001-$9,999
c. $10,000-$19,999
d. $20,000-$29,999
e. $30,000-$39,999
f. $40,000-$49,999
g. $50,000-$59,999
h. $60,000-$69,999
i. $70,000-$79,999
j. $80,000-$89,999
k. $90,000-$99,999
l. Over $100,000