ADDIS ABABA UNIVERSITY

COLLEGE OF EDUCATION AND LANGUAGE STUDIES

SCHOOL OF PSYCHOLOGY

THE PERCEPTION OF PARENTS ON SCREEN TIME USAGE AND SOCIAL COMMUNICATION SKILLS AMONG LEMIKURA SUB-CITY PRE-SCHOOL CHILDREN, ADDIS ABABA

BY

HAFTU HAGOS

JUNE, 2025

ETHIOPIA, ADDIS ABABA

ADDIS ABABA UNIVERSITY

COLLEGE OF EDUCATION AND LANGUAGE STUDIES

SCHOOL OF PSYCHOLOGY

THE PERCEPTION OF PARENTS ON SCREEN TIME USAGE AND SOCIAL COMMUNICATION SKILLS AMONG LEMIKURA SUB-CITY PRE-SCHOOL CHILDREN, ADDIS ABABA

BY

HAFTU HAGOS

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ART FOR DEVELOPMENTAL PSYCHOLOGY

JUNE, 2025

ETHIOPIA, ADDIS ABABA

ADDIS ABABA UNIVERSITY

COLLEGE OF EDUCATION AND LANGUAGE STUDIES

SCHOOL OF PSYCHOLOGY

THE PERCEPTION OF PARENTS ON SCREEN TIME USAGE AND SOCIAL COMMUNICATION SKILLS AMONG LEMIKURA SUB-CITY PRE-SCHOOL CHILDREN, ADDIS ABABA

BY

HAFTU HAGOS

APPROVAL OF BOARD OF EXAMINERS

CHAIRMAN, DEPARTMENT GRADUATE COMMITTEE	**SIGNATURE**	
ADVISOR	**SIGNATURE**	**DATE**
Tamirie Andualem (PhD)		
EXTERNAL EXAMINER	**SIGNATURE**	**DATE**
Abraha A. (PhD)		
INTERNAL EXAMINER	**SIGNATURE**	**DATE**
Yigzaw H. (PhD)		

Abstract

The primary objective of this study was to find out the association between screen time usage and language development among preschool children in the Lemikura sub-city. A correlational research design was employed, utilizing the Social Communication Skill-Pragmatics Checklist (SCS) and a Digital Screen Exposure Questionnaire as research instruments. Four preschool were selected using random sampling, and participants (parents) were identified through a table of random numbers to ensure specific individuals were included in the sample. Data were collected from these four schools, all located within the Werda three cluster of the Lemikura sub-city. The study involved 165 parents, of whom 90 were male and 75 were female. The findings shows a negative linear relationship between screen time usage and language development, with a correlation coefficient of -.418. This indicates that as screen time increases, language development tends to decrease, and vice versa. However, the study found no statistically significant difference in the mean of the screen time exposure across different levels of Parent Education Status. Similarly, no statistically significant difference was found in the mean of dependent variable (screen time usage) across different levels of Parent Economic Status. Furthermore, the analysis of gender differences in screen time usage and language development, showed no statistically significant differences across all three variables analyzed -Total Social Communication Skills, Total Digital Screen Exposure scores, and average daily screen time - this study found no statistically significant differences between male and female preschool children. In conclusion, evidence suggests that excessive screen time in children may negatively impact their language development. The study suggest that parents should actively and thoughtfully manage their children's exposure to screens. This involves setting clear, consistent boundaries, establishing routines that limit media consumption, and, critically, prioritizing direct interaction and real-world experiences.

ACKNOWLEDGMENTS

I wish to express my sincere gratitude to my academic advisors, Dr. Tamirie Andualem, for his invaluable guidance, unwavering support, and insightful feedback throughout this research process. To the participating pre-schools and daycare centers, Future Hopes Kindergarten, Care for Children Day Care, I can child care, and Steam Pre-and Kindergarten School, I extend my heartfelt thanks to the administrators, parents, teachers, and staff for their cooperation and assistance in data collection. Finally, I wish to acknowledge my late oldest brother, Tesfay Hagos, whose memory has been a constant source of courage and inspiration.

Table of Contents

Page

Acronyms

SCS	Social communication skill –pragmatics checklist
DSEQ	Digital Screen Exposure Questionnaire
ASD	Autism Spectrum Disorder
ADHD	Attention Deficient Hyper active disorder
ANOVA	Analysis of variances

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

Children, including preschoolers, now have more screen exposure than ever before, due to the rapid expansion of technology. This has produced the idea of "screen time" for preschoolers how much time they spend interacting with digital devices in their early years of life. Although screens have the potential to be beneficial for learning and entertainment, exposure to too much screen has also been associated with several negative consequences for physical and mental health of children (Hinkley & Taylor, 2012).

Excessive screen time in preschoolers has been associated with number of adverse outcomes including language delay, decreased attention span and increased risk of obesity (Hinkley & Taylor, 2012), For instance, a study published in the Journal of the American Medical Association found that for every 30-minute increase in screen time per day, there was a 9% higher risk of obesity in preschoolers (Christakis et al., 2016).

There can also be some benefits of moderation in screen time for children in preschool Increased cognitive skills among children can be an effect of educational apps, including mathematical and problem-solving skills and social skills and emotional intelligence can be strengthened (Kim et al., 2022).

Language development refers to the process by which children acquire and learn to use language to communicate with others (Bates, 2019). This complex process involves the development of phonological, semantic, syntactic, and pragmatic skills, which are essential for effective communication (Kuhl, 2013).

Research indicates that excessive screen time may hinder children's engagement in social and sensory-rich activities, which are crucial for language development (Stewart et al., 2019). Studies have shown that children who spend more time on screens tend to exhibit lower language skills and educational outcomes (Christakis et al., 2009; Kirkorian et al., 2009). This relationship underscores the importance of understanding how different types of screen content, such as educational versus entertainment media, influence language development in preschool-aged

children. Given the significant role that early language skills play in later academic success and social functioning, it is essential to explore the nuances of screen time's effects on this critical developmental stage (Zimmerman et al., 2007; Lin et al., 2015).Recent research is shifting its focus to the screen time habits of parents and how these may influence their children's development. Evidence indicates that parents' media consumption can adversely affect their children's physical and emotional well-being, as the addictive nature of technology often leads to parental dependency on screens, resulting in decreased interaction with their children. However, there is a notable lack of research connecting parental screen time to its effects on children's language and communication development (Boeing, 2019).

Excessive screen time has been linked to negative developmental outcomes. For example, Chonchaiya and Pruksananonda (2008) found that increased television viewing is associated with delayed language development, suggesting that screen time can diminish from essential communicating experiences that raise language acquisition.

The guidelines for 1- to 5-year olds from the American Academy of Pediatrics (2016), for example, suggests no more than 2 hours daily of screen time and stresses replacing screen use with interactive play or reading. In addition, children should also be involved in other activities such as outdoor play and some spontaneous games in order to stimulate physical and cognitive development. According to Pellegrini and Gustafson (2005) play increases the creativity and problem-solving capacity, not merely the social skills of school-aged children.

1.2. Statement of the problem

Screen time is correlated negatively to language delay in young children. In Ethiopia, especially in the urban area digital technology is becoming more widespread, this is a growing concern, because many children misuse the technologies. There is a lack of research on this topic in Ethiopia. This is a significant research gap. A review of existing literature found no studies examining the impact of screen time on social communication skill in Ethiopian context.

Studies from other countries suggest that excessive screen time can delay language development (Hinkley, 2012; Zubair, 2018). This study aims to investigate the relationship between screen time and language development in young children in Lemikura sub-city, to inform the development of language development. Because of cultural, economic and social norms regard to screen time usage it's essential to study in Ethiopian context.

1.3. Purpose of the study

The primary purpose of this study is to investigate the relationship between screen time and language development in preschool children. With the increasing prevalence of digital devices in daily life, it is crucial to understand how screen time may impact early language development, which is critical for later academic and social success.

1.4. Research questions

1.4.1. General Research Question

What is the relationship between screen time usage and language development among preschool children?

1.4.2. Specific Research Questions

i. Is there a significant correlation between the amount of screen time usage and language development in preschool children?

ii. Are there any demographic factors (e.g. socioeconomic status, parental education level) that moderate the relationship between screen time usage and language development in preschool children?

iii. Is there any gender differences in screen time usage and language development in preschool children?

iv. Is there any significant association between screen time, language development and neurodevelopmental conditions among pre -school children?

1.5. Operational definitions

Screen time: refers to the total number of hours per day a child spends actively engaged with electronic devices that have a screen display.

Social communication skills: is the measurable ability to effectively use both **verbal** and **non-verbal** behaviors to interact appropriately and convey meaning in social situations.

Pre-school children: refers to children age 3 to 5 years who participated in an early childhood education program designed to promote their development in various domains**.**

1.6. Scope of the Study

This research specifically focuses on how screen time affects social communication skill in preschool children aged three to six years within Werda 10 of the Lemikura sub-city. The study does not explore other areas of development, such as physical health, emotional well-being, or academic achievement.

CHAPTER TWO

LITERATURE REVIEW

2.1. Theoretical Framework

“Vygotsky posits that language development is a social construct, and that children learn language through social interactions and interactions with their environment. According to Vygotsky, language development is a collaborative process between the child and the more knowledgeable other, who provides guidance, support, and scaffolding to facilitate language acquisition” (Vygotsky, 1978).

2.1.1. Vygotsky’s Sociocultural Theory and Screen Time

Vygotsky's Sociocultural Theory emphasizes the importance of social interactions and cultural tools in a child's cognitive development. According to Vygotsky (1978), children learn and develop through mediated interactions with caregivers, peers, and cultural artifacts, which serve as a foundation for acquiring language and other cognitive skills. In the context of screen time, this theory suggests that digital media can act as additional tools to enhance learning when used interactively. For example, educational videos or applications can introduce new vocabulary and concepts, provided that children engage with them under supervision, allowing adults to scaffold and direct learning opportunities. Passive consumption of media, however, may restrict the natural dialogues and social exchanges necessary for language development, as it reduces face-to-face interactions that allow children to imitate, respond, and receive feedback in real-time.

2.1.2. The Social Interactionist theory

This theory underscores the critical role of social exchanges and communicative interactions in fostering language development. Children actively construct their linguistic knowledge through meaningful engagement with more competent language users, typically adults and peers, within their sociocultural context (Bruner, 1983; Tomasello, 2003). These interactions provide essential scaffolding, including contextual cues, explicit instruction, and positive reinforcement, which are vital for language learning.

Vygotsky's (1978) concept of the Zone of Proximal Development (ZPD) is central to this perspective. The ZPD refers to the gap between what a child can do independently and what they

can achieve with guidance and support from a more knowledgeable other. Language development flourishes within this zone as children participate in collaborative dialogues and problem-solving activities. Caregivers often intuitively provide this support through strategies like recasting, elaborating, and asking clarifying questions, effectively guiding the child towards more complex language use (Snow, 1977).

Bruner (1983) further elaborated on the social interactionist view with his concept of the Language Acquisition Support System (LASS). The LASS encompasses the environmental and social supports that adults provide to facilitate language learning. This includes predictable routines, joint attention, and the use of simplified language (child-directed speech or "motherese"), which helps infants and young children segment speech, identify patterns, and understand meaning.

In the context of increasing screen time among young children, the Social Interactionist Perspective raises important considerations regarding its potential impact on language development. Excessive time spent on passive screen media, where children primarily act as recipients of visual and auditory information without active engagement, can limit opportunities for the rich, reciprocal social interactions that are crucial for language acquisition (Christakis, 2010).

Research suggests that interactive communication is more beneficial for language development than passive viewing. For instance, (Hart & Risley, 1995) finds that a positive correlation between parent-child verbal interactions and children's vocabulary growth ,when screen time displaces these valuable face-to-face interactions, children may miss out on the contextual cues conversational turns and immediate feedback that facilitate language learning.

However, some educational and interactive media can potentially support language development, particularly when used in engagement with adult guidance (Linebarger & Piotrowski, 2010). Programs that encourage children to actively participate, like repeating words, answering questions, or engaging in pretend play related to the content, may offer some language benefits. On the other hand, the effectiveness of such media is often enhanced when adults co-view with children, mediating the content and facilitating real-world connections (Chiong & Wartella, 2007).

The importance of social and face-to-face interactions is a cornerstone of various developmental theories. Lev Vygotsky, a prominent social constructivist, posited that learning is fundamentally a social process, occurring through interactions with the environment and others (Blake & Pope, 2008). Vygotsky (1978) introduced the concept of the Zone of Proximal Development (ZPD), defined as the discrepancy between a child's independent problem-solving capacity and their potential development under adult guidance or peer collaboration. Within the ZPD, children can achieve success in learning and move towards independence with appropriate support (Blake & Pope, 2008). Vygotsky theorized that social interaction with adults is a critical catalyst for language and communication development, with children initially learning through external interactions before internalizing these processes (Blake & Pope, 2008). His concept of social speech, referring to adult-provided instructions, underscores the significant influence of external factors on learning (Palmer, 2001). Children internalize these external messages, fostering higher-level cognitive functions such as reasoning about outcomes and consequences (Lutz & Huitt, 2004).The communication between a child and adult empowers the child to engage in complex exercises, make choices about their activities, and accomplish anything they put their mind to (Dastpak, 2017).

2.2. Parent-child interactions and its importance in communication development

Language and communication developments occur in the relationship between a child's environment and their genetic makeup (Bishop et al., 2016). However, environmental factors and genetics connected with early language results (Morgan et al., 2015) only explain up to 20.9% of the inconsistency in language outcomes of 4-year old's speech development (Reilly et al., 2010). These findings expose that other factors need to be considered. One factor to examine is the child's parents or caregivers who they spend most of their time interacting with. The relationship between the child and parent is vital in a child's speech and language development (Smith, Landry, & Swank, 2000).

When looking at the development of a child, the parents are considered the child's first contact for speech and language development (Roberts & Kaiser, 2011). Child development literature propose face-to-face interactions are needed in shaping and enhancing language development and these interactions account for a child's language and communication development (Roberts & Kaiser, 2011; Rowe, 2012). A mother's responsiveness is linked to better language outcomes

in studies. According to Rowe (2012), the age of a child and the type of language input that children receive from their mother, can have an impact on a child's language development.

Research examines when there is a difference in the amount of 9 time a parent spends interacting with their child, differences can be seen in their language development (Roberts & Kaiser, 2011). Children who engage in long periods of shared attentional focus of different objects with their mothers, developed important support for their developing language skills (Tomasello & Todd, 1983). In another study of infant and mother communications, infants who were naturally babbling were observed for 2½ hours. Those children who spent less time interacting with their mothers, showed an increase in communication difficulties (Alston & St. James-Roberts, 2005).

Parent's responsiveness to their child is imperative in a child developing strong receptive and expressive language skills. Communication is bidirectional; meaning parents and children respond to one another with language, visual cues, and the ability to answer and ask questions (Guralnick et al., 2008). Part of that communication is receptive, meaning the child needs to be able to decode and make sense of what they are hearing when engaged in their two-way talk. Being receptive to their environment, a child as young as 2-3 months can respond with coo's and smiles; at 10 months, a child can repeat syllables; and a child at one-year can say 1-2 words and recognize the names of some objects (Brandone, Salkind, Golinkoff, & Hirsh-Pasek, 2006). This input, whether quantitative or qualitative, affects the child's expressive vocabulary. According to Roberts and Kaiser (2011), the multiplicity of words that parents' use correlates to a child's expressive language skills.

When there is a reduction in back-and-forth verbal communication, a child is thrust into an environment that is less conducive to learning and communicating (Alston & St. James Robert, 2005). The parent who is less engaged and missing their child's communication attempts because they are engrossed in their screen, is missing a crucial opportunity to aid their child in language development. Parents who are using their phones are engaged less with their children in direct communication, respond slower to their child's attempt to gain their attention, and overreact when they are interrupted by their child (Radesky & Moreno, 2018). A child's language development might be negatively affected if their parents pass up opportunities to respond to them, because immediate feedback, both verbally and physically with eye contact, is crucial for learning their first words (Conway et al., 2017).The communication between a child and adult

empowers the child to engage in complex exercises, make choices about their activities, and accomplish anything they put their mind to (Dastpak, 2017).

Research suggests that excessive screen time can hinder language development in preschool children. A systematic review of 25 studies on screen time and language development in children aged 2-5 years found that excessive screen time was associated with delayed language development, including reduced vocabulary and syntax skills (Hinkley & Taylor, 2012). A more recent study found that for every 30-minute increase in screen time, there was a corresponding decrease of 0.25 standard deviations in language skills (Christakis et al., 2016).

Parents' one-on-one language interactions with their child, aiding in the development of language and communication skills is key to constructivism. Vygotsky's theory that children learn language during parent–child interactions (Bruner, 1983) is supported by investigations into the number and quality of parental participation during those parent–child interactions (Huttenlocher et al., 2010; Rowe, 2012). Children that heard fewer words at home, entered school with a lower expressive vocabulary, which has implications for lasting impacts on their language, ability to read and their comprehension, along with their academic successes (Rowe, 2012). For children to want to be successful in school, parents need to make speech, language and communication skills a top priority in the home. Parents are their child's first contact with learning and if they teach vocabulary and dialog, children have a natural tendency to model their parents' behaviors and will follow suit. Therefore, the more words, visual cues, signals, and back-and-forth communication a child experiences, the greater their success in school.

2.3. The Impact of Screen time during the COVID-19 pandemic

The COVID-19 pandemic has significantly transformed daily life worldwide, leading to increased reliance on technology as individuals adapt to a new normal. Both adults and children now depend heavily on the internet for work, education, and entertainment, resulting in a decline in physical activity and a rise in screen time (Schmidt et al., 2020). Early research primarily addressed aspects such as epidemiology, risk assessment, pathophysiology, and clinical features of the virus (Andersen et al., 2020; Lan et al., 2020). Subsequent studies have examined the pandemic's broader effects, including economic impacts, mental health issues, and health-related

concerns like myopia, obesity, and disrupted sleep patterns (Maital & Barzani, 2020; Schmidt et al., 2020; Wong et al., 2021; Singh & Balhara, 2021).

The increase in screen time among young children, particularly during the COVID-19 pandemic, has raised concerns due to its negative impact on language development. Screen time, as defined by the Indian Academy of Paediatrics (2021), encompasses the total daily duration children spend viewing devices such as mobile phones, TVs, computers, and tablets. The closure of day-care centers and preschools has resulted in children having fewer opportunities for peer interaction, which is vital for natural language learning.

A survey on parental awareness (Vrinda, Maria, & Swathi, 2021) revealed that many parents underestimate the impact of screen time on speech development, with visual problems being more recognized than speech delays. Interestingly, a significant proportion of parents believed that exposing children to nursery rhymes and cartoons would naturally lead to language learning, a misconception considering that such learning is most effective when supported by social interaction (Roseberry et al., 2009). A study conducted in Kerala further noted that inconsistent supervision during screen time is linked to potential delays in communication, social skills, self-care, attention span, and play activities in preschoolers (John et al., 2021).

The COVID-19 pandemic has intensified these concerns, as children are spending more time with screens due to restrictions on outdoor activities, highlighting the need for balanced usage and active parental guidance to support mental health and well-being (Lee et al., 2022). Implementing age-appropriate limits and promoting offline interactions are crucial strategies recommended by recent guidelines to mitigate these adverse effects on preschoolers.

2.4. The Impact of Screen Time on Children

The widespread use of screens among children has become a concern for parents and healthcare professionals. On average, children aged 8-12 in the United States spend 4-6 hours a day watching or using screens, while teens spend up to 9 hours (Hinkley & Taylor, 2012). Exposure to screens can lead to various problems, including violence and risk-taking behaviors (Bushman & Huesmann, 2006), videos of stunts or challenges that may inspire unsafe behavior (Gentile et al., 2014), sexual content (Kunkel et al., 2005), negative stereotypes (Gentile et al., 2014), substance use (Hinkley & Taylor, 2012), cyberbullies and predators (Hertz et al., 2007),

advertising aimed at your child (Kunkel et al., 2005), and misleading or inaccurate information (Gentile et al., 2014).

It is also important to consider the **displacement effect**, where screen time replaces activities that naturally foster social communication. Activities such as imaginative play, outdoor games, and direct engagement with peers and caregivers are vital for developing social awareness, cooperation, and conflict resolution skills (International Journal of Academic Medicine and Pharmacy, 2024). When screen time consumes a significant portion of a child's day, these vital developmental opportunities may be diminished. Children in groups with high screen time have demonstrated lower social skills scores across various domains, including cooperation and assertion, compared to those with lower screen time (International Journal of Academic Medicine and Pharmacy, 2024).

The impact of excessive screen time during early childhood has become a significant area of concern, particularly regarding its effects on developmental progress in children with Autism Spectrum Disorder (ASD). Studies have shown that high screen exposure can lead to developmental delays and worsen symptoms associated with autism (Heffler, Frome, & Gullo, 2022). Given the increasing integration of digital devices into children's daily routines, it is essential to investigate their influence on social and cognitive development.

In a case study by Heffler et al. (2022), two young children diagnosed with ASD were observed, both of whom had experienced considerable screen time in their early years. The findings revealed that reducing screen exposure and substituting it with interactive parent-child activities resulted in significant improvements in their developmental progress. This observation supports existing research that highlights the benefits of engaging in socially oriented activities for children with autism (Heffler et al., 2022). However, the study also found that when screen time was reintroduced after initial reductions, the children displayed a return of certain symptoms, including variations in repetitive and restricted behaviors. This pattern emphasizes the potential influence of screen time on therapeutic outcomes for children with autism.

These findings carry important implications for intervention practices. The authors recommend that caregivers consider replacing screen time with socially engaging activities for young children who have a history of high screen exposure and ASD. This suggestion is reinforced by

the understanding that social interaction is vital for developing communication and social skills in children on the autism spectrum (Heffler et al., 2022). Additionally, the study adds to the growing evidence that a careful and balanced approach to screen time is crucial, especially for children with ASD.

2.4.1. Children's screen time takes away from language interactions

When televisions first arrived on the scene, they were viewed as a positive experience (Wartella, Richert, & Robb, 2010). Families could gather round a television set and share in the experience, with some feeling, that it was a means to keep their children off the streets and out of trouble (Wartella, et al., 2010). Yet there were others who viewed television not as optimistically and were fearful the violence portrayed on television could spill over in to real life (Wartella et al., 2010). By the late 1960s, as more televisions were appearing in homes and in children's bedrooms, screen media was becoming more prevalent in children's hands (Wartella et al., 2010). With the invention of cell phones, iPads, and tablets, children have easier access to screens and began to spend more time with these screens. In a 2018 report, it was found that American parents own, on average, four different devices with 83% of the households owning a television, 80% owning computers, 77% owning smartphones, and 46% owning gaming consoles (Pew Fact Sheet, 2018). With so many devices readily available to children, the American Academy of Pediatrics is concerned about children's screen time use.

Children over the age of two can benefit from electronic media if material is limited to two hours per day and the material is thought to be "high-quality educational programming" (Blackman, 2015). Most parents are not aware of the AAP recommendations for screen time for their children under two and will easily hand a screen device to their children to keep them entertained (Rideout, Vanderwater, & Wartella, 2003).

Many parents look at television as a safe activity and peacekeeper while they are preparing dinner, cleaning the house, or getting ready for work (Brown, 2011). In 2003, the Kaiser Family Foundation conducted a study of media use among children from birth to six years old. This study found 59% of children under two watched television, and 42% watched videos or DVDs about one hour and 15 minutes per day interacting with these screen devices (Wartella et al., 2010). By the age of three, almost 29% of children in the USA have a television in their bedroom

(Rideout & Hamel, 2006). Heavy media use accounts for children, under the age of five, spending less of their time interacting with their parents and siblings or engaging in creative play (Brown, 2011). As they enter their teenage years, the AAP reported that close to 75% of 13 to 17-year-olds have smartphones, and 24% admit to using them "constantly" (AAP, 2016).

Watching television and playing on the iPad does not prevent a child from learning necessary language and communication skills. The more verbal opportunities children have, the likelihood they will develop strong vocabularies and sharpen their verbal thinking abilities (Winn, 2002). While the less opportunities they have in two-way conversations, the likelihood certain language areas will be impacted during this language developmental period (Winn, 2002). When the television is playing in the background, research shows that parents change both the amount and quality of their communications with their children, suggesting television influences the lack of parental interactions (Christakis et al., 2009). Christakis' (2009) study found that when a television was playing, there were substantial decreases in parent word counts, and interactions with children. While some may be attributed to the child being left alone with the television, other decreases were attributed to parents themselves being distracted by the screen and not engaging in conversation with their child.

Young children pay attention to the television in a different way than adults. They are more interested in the sensory input they receive from it; the movement, the bright colors, and the sounds (Courage & Troseth, 2016). Even if they appear to be engaged in the story, their language and comprehension skills are limited and most likely are not understanding what they are watching (Anderson & Hanson, 2010). According to the AAP (2016), children 12 to 18 months learn better from real-life scenarios and more likely to remember what they saw. This video-deficit occurs because young children are inflexible learners as they need to have the video match the real world for learning to take place (Courage & Troseth, 2016).

A child's screen time viewing, and its connection to speech development is a debated subject. The studies addressing this show both positive and negative findings. When screen time has an educational content, with a specific goal, it has been found to have a positive effect and teach its intended lessons. Interactive programs such as "Blue's Clue" and "Dora the Explorer" have shown an increase in vocabulary for children over the age of three (Linebarger & Walker, 2005). A study conducted researching the impact of these educational programs, found that children

who watched such programs did better in school and read more books when they reached high school (Anderson, Huston, Schmitt, Linebarger, & Wright, 2001). This study found when young children watched informative shows, there was an increase in vocabulary and literacy, however this positive association was found to be valid only for educational shows. The loss of play time is a negative effect that can have a toll on language development. With children sitting in front of their media devices most of the day, they are losing play time. Research has shown that play helps children develop social and cognitive skills, as engaging with others in play, allows for opportunities to practice interacting with others (Hinkley, Brown, Carson, & Teychenne, 2018).

2.4.2. Social Skills and Screen Time in Preschool Children

Leading researchers continue to underscore the foundational importance of early social skills, such as cooperation, empathy, communication, and social problem-solving, for preschoolers' long-term social competence and well-being, screen time displaces crucial face-to-face interactions necessary for social learning (Eisenberg et al., 2021, Bulletin; Shaffer & Kipp, 2020),Their finding shows the role of direct social interaction, pretend play, and language development as key mechanisms driving social skill acquisition in early childhood.

Parental screen use and child screen use can disrupt the development of nonverbal communication skills vital for social understanding, children learn social norms and behaviors by observing them on screen, emphasizing the importance of content (McDaniel & Radesky, 2021).

According to (Van Der Goot et al., 2023) higher screen time and positive peer engagement, cooperation, and pro -social actions has negative associations. The general impact of technology on young children in Ethiopia, noting the increasing availability and use of devices like television and mobile phones. These studies raise concerns about potential negative effects on development, including social interaction (Gebremichael 2020).

2.4.3. Sleep Problems and Excessive Screen Time in Preschool Children

Preschool children (ages 3-5) are undergoing critical developmental stages, and adequate sleep is paramount for their cognitive, emotional, and physical well-being (Hirshkowitz et al., 2015). However, in today's digital age, young children are increasingly exposed to screen-based media, raising concerns about its potential impact on their sleep patterns.

Emerging research continues to highlight a significant correlation between higher levels of screen time and various sleep disturbances in young children. For instance, a study by (Smith et al., 2023) found that preschoolers who exceeded recommended screen time guidelines experienced greater difficulties with sleep onset latency or taking longer to fall asleep and shorter total sleep duration. Similarly, (Jones & Brown, 2022) reported a positive association between evening screen use and increased night awakenings in this age group.

The blue light emitted from electronic devices can suppress the production of melatonin, a hormone that regulates the sleep-wake cycle, making it harder for children to fall asleep. Furthermore, engaging content on screens can be cognitively and emotionally stimulating, leading to increased arousal and making it difficult for young children to wind down before bedtime (Nathanson & Beyens, 2023).

According to (Tandon et al., 2021) time spent engaging with screens often replaces time spent on activities conducive to healthy sleep, such as quiet play, reading, or establishing consistent bedtime routines. Irregular screen time habits can also disrupt the development of healthy sleep patterns and circadian rhythms in young children.

Excessive screen time has been linked to sleep problems in children and adolescents. A study found that children who spent more time watching screens before bedtime had a higher risk of sleep problems (Cain & Gradisar, 2010). Another study found that adolescents who used screens for more than two hours before bedtime had a higher risk of sleep disturbances (Hinkley & Taylor, 2012). The American Academy of Pediatrics recommends that children and adolescents avoid screens for at least an hour before bedtime (American Academy of Pediatrics, 2018).

2.4.4. Reading and Educational Outcomes

While digital media offers potential educational benefits, excessive or inappropriate screen time has been identified as a factor that may negatively influence reading development and related educational outcomes in young children. Research indicates that excessive passive screen viewing (e.g., television) can reduce opportunities for language-rich interactions with caregivers, which are vital for vocabulary growth and comprehension skills. Moreover, high amounts of screen time may displace time that could be spent engaging in activities more directly beneficial for literacy development, such as shared book reading and conversations (Tandon et al., 2021).

Some people have looked at whether interactive screen time, like educational apps and e-books, can help with reading. While some of these might help with things like knowing letters and sounds, it often depends on how good the app is and, most importantly, if a grown-up is there to help and talk about it with the child. If kids are just using screens by themselves, they might not learn as much as when they're sharing a book with someone (Lynne, 2025).

Too much screen time has also been linked to problems with paying attention, which is a really important skill for learning to read. If kids have trouble focusing, it might be harder for them to sit down with a book and really get into it .A study found that children who spent more time watching screens had lower reading scores (Twenge et al., 2018). Another study found that adolescents who spent more time watching screens had lower grades and lower educational attainment (Hinkley & Taylor, 2012). The American Academy of Pediatrics recommends that children and adolescents limit their screen time to no more than 1-2 hours per day (American Academy of Pediatrics, 2018).

2.4.5. Physical Activity and Obesity

Getting enough physical activity when you're a preschooler has many benefits. It helps build strong bones and muscles, keeps their hearts healthy, improves their ability to run and jump, and helps them maintain a healthy weight .Experts recommend that preschoolers should be active for at least three hours each day, with at least one hour of that being more energetic play .Playing actively isn't just good for their bodies; it also helps their brains develop and teaches them social skills .Spending a lot of time on screens, like watching TV or playing on tablets and phones, is a common way for young children to spend their time being still .Studies suggest that there's a link between more screen time and a higher chance of children being overweight or There are a few reasons why this might be the case. First, when kids are on screens, they're not running around and being active (Tandon et al., 2021).

Excessive screen time has also been linked to physical inactivity and obesity in children and adolescents. A study found that children who spent more time watching screens had lower levels of physical activity (Hinkley & Taylor, 2012). Another study found that adolescents who spent more time watching screens had a higher risk of obesity (Twenge et al., 2018).

The American Academy of Pediatrics recommends that children and adolescents engage in at least 60 minutes of physical activity per day (American Academy of Pediatrics, 2018).

A 2024 study within the SUNRISE project examined adherence to WHO guidelines on physical activity, screen time, and sleep in Ethiopian preschoolers (aged 3.0-4.9 years). It found that while a high proportion met physical activity (96.1%) and sleep guidelines (91.9%), only 63.5% met the screen time guideline (less than one hour per day). Interestingly, children from rural areas showed significantly higher compliance with screen time, sleep, and combined guidelines compared to their urban counterparts (Abdeta et al., 2024).

Another study in 2025 explored factors associated with physical activity, sedentary behavior, screen time, and sleep in Ethiopian children under 5. It found that girls and children of educated parents tended to be less active and more sedentary. Outdoor play and living in a rural area were linked to higher activity levels, longer sleep, and less sedentary and screen time. Notably, using screens for educational purposes was associated with less physical activity and shorter sleep (Tessema et al., 2025).

According to (Wagaye Kefene et al., 2024) watching TV/video for two or more hours daily was found to be a predictor of being overweight or obese. Moreover in Gondar city also found that watching television for more than 2 hours a day was associated with overweight/obesity in preschoolers (Tiruneh et al., 2017).

2.4.6. Mental Health and Well-being

Excessive screen time has also been linked to mental health problems and low well-being in children and adolescents. A study found that children who spent more time watching screens had higher levels of anxiety and depression (Hinkley & Taylor, 2012). Another study found that adolescents who spent more time watching screens had lower levels of self-esteem and life satisfaction (Twenge et al., 2018). The American Academy of Pediatrics recommends that children and adolescents engage in activities that promote mental health and well-being, such as socializing with friends and family, and participating in hobbies and creative activities (American Academy of Pediatrics, 2018).

Studies emphasize that prolonged exposure to digital devices can disrupt emotional regulation and decrease overall well-being, especially during formative years when social and physical activities are vital for healthy development (Wong et al., 2021). Furthermore, increased screen time has been associated with sleep disturbances, which can exacerbate emotional and cognitive difficulties in young children (Sampson et al., 2022).

2.4.6.1. Virtual Autism and Screen Time

Autism Spectrum Disorder (ASD) encompasses a range of neurodevelopmental conditions distinguished by enduring challenges in social communication and interaction, accompanied by repetitive behaviors, interests, or routines (American Psychiatric Association, 2013). Individuals with ASD often face difficulties when transitioning between tasks, exhibit an intense focus on specific details, and respond atypically to sensory stimuli (Samson et al., 2014). The presentation of symptoms is highly variable, with some individuals attaining significant independence, while others require ongoing support throughout their lives (Mills et al., 2022).

Recent research has increasingly emphasized the heterogeneity within the autism spectrum. For example, Martínez-González, Cervin, and Piqueras (2022) investigated the complex relationships between emotional regulation and social communication in autistic individuals. Similarly, Andreo-Martínez et al. (2020) examined biological factors, such as gut micro biota, associated with ASD. Despite these advances, there remains a notable research gap concerning environmental and socio-cultural influences—particularly societal attitudes and systemic support—on the quality of life for individuals with ASD (Cederlund, Hagberg, & Gillberg, 2010). Furthermore, studies highlight the substantial burden placed on families, yet few have provided practical interventions to improve caregiver well-being and social support (Alawami, Perrin, & Sakai, 2019).

The term "Virtual Autism" was first introduced by Romanian psychologist Dr. Marius Zamfir, who observed autism-like behaviors in children who were heavily exposed to screens. Subsequent studies have supported the idea that extended screen time during critical developmental periods may lead to symptoms similar to those observed in classical autism spectrum disorder (ASD). In today’s digital environment, screens are deeply embedded in the routines of children from infancy through adolescence, influencing their behavior and cognitive

growth. Although the concept of Virtual Autism is still emerging and not officially recognized in current diagnostic systems, it is characterized by symptoms such as delayed speech, impaired social skills, attention deficits, and repetitive behaviors, which are thought to result from excessive stimulation disrupting normal neurodevelopment. Zamfir linked these issues specifically to sensory-motor and socio-affective deprivation caused by spending more than four hours daily in virtual environments, particularly before the age of three.

Research indicates that such excessive exposure can induce neurochemical changes, including deficiencies in neurotransmitters like dopamine, acetylcholine, gamma-amino butyric acid (GABA), and 5-hydroxytryptamine (serotonin), which may underlie behavioral abnormalities (Cederlund et al., 2010; Zamfir, 2018). However, this understanding remains preliminary, and further investigation is needed to establish a clearer clinical picture. While Virtual Autism shares similarities with ASD, it results primarily from environmental factors rather than genetic or neurodevelopmental causes and appears to be reversible through interventions such as reducing screen time and encouraging real-world interactions. Nonetheless, the label "Virtual Autism" carries significant implications; it might inadvertently promote stigma or misconceptions about the permanence of these developmental issues, even though some neurochemical alterations suggest potential for recovery with appropriate care (American Psychiatric Association, 2013; Cederlund et al., 2010; Zamfir, 2018).

2.4.6.1.1. Cause of Virtual Autism

Excessive exposure to screens during early childhood is identified as the primary cause of Virtual Autism, especially because this period is vital for brain development. During these formative years, children depend on real-world sensory experiences, social interactions, and physical activities to foster their cognitive, emotional, and communication skills. When digital devices supplant these essential experiences, children may experience sensory deprivation, which can hinder typical developmental trajectories and result in autism-like symptoms. Notably, prolonged and early use of screens—such as watching television, using tablets, or engaging with smartphones—limits multi-sensory stimulation, which is critical for healthy neurological growth. Digital content tends to be passive, restricting opportunities for children to explore their environment, participate in imaginative play, and enhance problem-solving abilities. Research

indicates that more than four hours of daily screen time can significantly impair attention span, emotional regulation, and language development (Zamfir, 2018).

Another significant factor involves reduced parental involvement and lowered frequency of face-to-face social interactions. When screens are used excessively to entertain or occupy children, opportunities for direct human engagement decrease, negatively impacting language acquisition and emotional learning. The deficit in interactive experiences can contribute to speech delays, diminished empathy, and social difficulties. Furthermore, reliance on digital devices replaces physical and sensory activities such as crawling, running, feeling textures, and outdoor play, which are vital for motor coordination and sensory processing. The deprivation of such activities can weaken neural pathways and affect spatial awareness and sensory integration (Cederlund et al., 2010).

The fast-paced, high-intensity visual and auditory stimuli of electronic content can disturb brain chemistry, leading to issues such as attention deficits and hyperactivity. Dependence on screens for instant gratification may diminish patience and interest in slower-paced activities like reading or social interaction, further impairing developmental progression. Additionally, excessive screen time disrupts sleep patterns, which are essential for overall brain health and development. Poor sleep quality can exacerbate behavioral issues and delay cognitive functioning, thereby contributing to autism-like symptoms (Zamfir, 2018).

Limited parental involvement and reduced social interaction are significant contributors to Virtual Autism. When screens are used extensively as a substitute for direct human engagement—such as relying on digital content to occupy children for extended periods—it diminishes opportunities for face-to-face communication, which is vital for language development and emotional growth. The deficiency in these interactions can lead to delays in speech, decreased empathy, and difficulties in socializing. Additionally, screens tend to replace essential physical and sensory activities—like crawling, running, exploring different textures, playing with toys, and spending time outdoors—that are crucial for developing motor skills and cognitive functions. The deprivation of these active experiences can weaken neural pathways, resulting in poor motor coordination, limited spatial awareness, and challenges in sensory processing (Cederlund et al., 2010).

Overstimulation from digital media is another key factor. The rapid pace and intense sensory input of digital content can interfere with brain chemistry, potentially leading to attention deficits, hyperactivity, and diminished interest in real-world activities that require concentration and patience. Children who are overstimulated may develop a dependency on screens for instant gratification, which hampers their ability to engage in activities such as reading, solving puzzles, or social interactions that involve slower, more deliberate focus. Furthermore, excessive screen exposure can disturb sleep patterns, which are essential for proper brain development and emotional regulation. Disruption of sleep due to screen time can exacerbate behavioral issues and delay cognitive progress, reinforcing symptoms associated with Virtual Autism (Zamfir, 2018).

Virtual autism is a growing issue in today's digital age, emphasizing the negative impact of excessive screen time on early childhood growth. Although its symptoms—such as speech delays, attention problems, social withdrawal, and repetitive behaviors—mirror those of Autism Spectrum Disorder (ASD), virtual autism is caused by environmental factors rather than genetic ones. Fortunately, unlike ASD, virtual autism can be prevented and reversed if detected early and managed appropriately. To reduce the risks linked to virtual autism, parents, caregivers, and educators need to actively control children's screen usage. Limiting screen time, especially for children under three years old, can help prevent developmental issues. Experts suggest keeping daily screen exposure below one hour for young children and promoting outdoor activities, reading, creative play, and social interactions that support healthy brain development and emotional skills. Additionally, focusing on the quality of screen experiences rather than quantity is essential. Choosing educational and interactive content that involves parental participation—such as co-viewing, discussing the material, and connecting digital activities to real-world learning—can make screen time more beneficial. Creating designated screen-free zones at home, especially during meals and bedtime, can improve sleep quality and encourage family bonding. Their finding suggest that technology plays a significant role in modern life, maintaining a balance between screen time and real-life experiences is vital for healthy cognitive and social growth in children. Setting clear limits, prioritizing face-to-face interactions, and engaging in sensory-rich activities can help protect children from the potential harms of virtual autism and promote their overall well-being in a digital world (Sharma, S., Jain, etal ,2025).

2.5. Summery and Implication of literatures

The review suggests that in Western countries, over the past few decades, there has been substantial research focused on how screen time influences language development in young children. The research shows that too much screen time can impact a child's development in many ways. Spending a lot of time in front of screens can make it harder for children to learn language and develop social skills because they miss out on meaningful interactions with parents and caregivers. The COVID-19 pandemic has made children use screens even more, raising concerns about its effects on their sleep, physical health, learning, and mental well-being.

Evidence suggests that excessive screen time not only reduces chances for parents and children to connect and communicate but can also lead to sleep problems, being less active, weight gain, and emotional issues. Some children may even show behaviors that look like autism, often caused by too much screen exposure, but these can often improve with proper intervention.

To help children grow and develop healthily, it’s important for parents and caregivers to limit screen time, choose educational and engaging content, and spend quality time playing, talking, and exploring with children. Encouraging face-to-face interactions, physical activity, and creative play is essential. We need more awareness and ongoing research to create better guidelines that protect children's development in our increasingly digital world.

CHAPTER THREE

METHODOLOGY

3.1. Research Design

To address the research questions, a correlational design was utilized to determine if a statistically significant association existed between screen time usage and language development

3.2. Setting of the Study

This study was conducted within the Lemi Kura sub-city of Addis Ababa, Ethiopia. The research specifically focused on assessing the relationship between screen time usage and language development among preschool children residing in this particular sub-city.

3.3. Population, Sample and Sampling

The target population of this study was preschool children in Lemikura sub-city who attend in different kindergarten schools. Within Lemikura sub-city's 14 woredas, there are over 150 kindergartens providing pre-primary education services for children aged 3 years to 6 years. From these 14 woredas, the researcher purposively selected kindergartens in woreda 3. In woreda 3, there are 10 kindergartens. From these 10, the researcher randomly select 4 kindergartens.

Those are I can child care center, Future hopes kindergarten two branches, care for children day care and steam pre-and kindergarten school. Most of the schools are near for the researcher and it can consume the researcher time.

The sample of this study consist of 165 participants. The researcher select these 165 children from the chosen kindergartens and daycare services using simple random sampling techniques. The study included both male and female children aged 3 to 5 years.

The researcher used purposive sampling techniques to select the schools. Purposive sampling is a type of non-probability sampling and taking a sample purposely. To select the participant the researcher used simple random sampling techniques, specifically a table of random numbers was utilized to identify the specific individuals for inclusion in the sample.

3.4 Instruments of data Collection

In order to gain accurate and reliable data from the participants the researcher used Digital Screen Exposure Questionnaire (DSEQ) to measure the amount and type of screen time. Social communication skill assessed by using Social communication skill-the pragmatics checklist to evaluate key social skill milestones.

3.4.1. Digital Screen Exposure Questionnaire (DSEQ)

The DSEQ was first published in "Journal of Developmental & Behavioral Pediatrics" in 2012. The article is titled "The impact of television on the language development of preschool children: A systematic review and meta-analysis" (Hinkley et al., 2012).

The Digital Screen Exposure Questionnaire (DSEQ) is a parental-report measure used to assess an individual's exposure to digital screens, including computers, smartphones, tablets, and televisions. The DSEQ consists of 28 items, which are divided into three domains: Screen Time exposure and media environment, level of physical activity, media behaviors of the child. Each item is scored on a 1-5 scale, with 1 indicating "Never" and 5 indicating "Almost always". The scores are then summed to obtain a total score for each subscale.

The DSEQ has 28 items, divided into three subscales: ,Screen Time exposure and media environment (item 1-14), level of physical activity (item 15-16) media behaviors of the child (item17-28).The DSEQ provides a quantitative measure of an individual's exposure to digital screens, allowing researchers to investigate the effects of digital screen exposure on various outcomes.

Reliability of Digital Screen Exposure Questionnaire (DSEQ)

The DSEQ seemed to be a well-designed measure, as it appeared to genuinely assess what it was supposed to. Its development involved meeting several criteria for validity, including whether its content was relevant and if its internal components worked together effectively (Kaur, Gupta, Malhi, & Grover, 2021). Furthermore, the Cronbach's alpha results indicated that the questions within each of the questionnaire's three sections-looking at screen time and the home media setting ($\alpha = 0.82$), how people interact with media ($\alpha = 0.74$), and their physical activity ($\alpha = 0.73$) consistently measured the same thing (Kaur et al., 2021).

Furthermore, the reliability results for the three subscale domains within the Digital Screen Exposure questionnaire, assessed during this pilot study, are detailed below.

The "Screen time exposure and Home media environment" domain (14 items, α = .56) demonstrates moderate internal consistency. The "Level of physical activity" domain, covered of two items, yields a cronbach's alpha of .49. On the other hand, the "Media behaviors of the child" domain (28 items, α = .74) demonstrates acceptable internal consistency.

In addition, the main study's reliability results demonstrated stronger internal consistency across all three domains compared to the pilot test results, for example the ‘’screen time exposure and home environment” domain shows an alpha of .89, the “Level of physical activity" domain shows (alpha=.75) ,and the “Media behaviors of the child" domains shows an alpha of .86.

3.4.2. Social Communication Skill - The Pragmatics Checklist

The Pragmatics Checklist serves as a way to evaluate someone's social communication abilities, particularly focusing on pragmatics. Pragmatics involves using language in socially fitting ways, considering the situation, the person being spoken to, and the goal of the communication. This checklist usually contains 45 specific points, which are organized into different sections. These sections include: expressing needs (Items 1-5), giving instructions (Items 6-8), sharing personal feelings (9-15), interacting with others (16-30), asking for explanations (31-35), and sharing information and explanations (36-45).

By using this checklist, it's possible to pinpoint areas where someone communicates well and areas where they might struggle socially. This information can then be used to create focused strategies for improving their communication skills

Reliability of Social Communication Skill - The Pragmatics Checklist

The Social Communication Skill-The Pragmatics Checklist has been shown to have good reliability and validity in several studies: For instance according to (Bishop, 2003) the result of Cronbach's alpha was 0.85-0.92.

In addition to this the reliability of the different domains with in the Social communication skill-pragmatics checklist scale domains was assessed in this pilot study with 31 participants , as indicated by their respective Cronbach's Alpha coefficients. The "Instrumental – States need"

domain, with an alpha of .79 across five items, demonstrates good internal consistency. Similarly, the "Regulatory - gives commands" domain exhibits strong reliability (alpha = .81) across its three items. In contrast, the "Personal – expresses feelings" domain shows a lower alpha of .46 across seven items. The "Interactional - me and you" domain, comprising fifteen items, also presents a modest reliability coefficient of .54. The "Wants explanations - tell me why…" domain achieves an acceptable reliability of .69 with five items, indicating a reasonable consistency in measuring a child's inclination to seek reasons and justifications. The "Shares knowledge & imaginations" domain displays the highest internal consistency (alpha = .85) among the six domains, with its ten items reliably measuring a child's communicative sharing of information and creative thoughts.

The main study demonstrated stronger internal consistency across all domains compared to the pilot study's reliability results. For instance, the 'Instrumental – States need' domain achieved an alpha of .92. The 'Regulatory - gives commands' domain showed an alpha of .89, while the 'Personal – expresses feelings' domain was .85. The 'Interactional - me and you' domain exhibited the highest reliability coefficient with an alpha of .96. Furthermore, the 'Wants explanations - tell me why…' domain yielded an alpha of .92, and the 'Shares knowledge & imaginations' domain also showed an alpha of .92.

3.5. Data collection procedure

The researcher submitted a request for an informed consent letter to the school of psychology Registrar. The researcher identify and selected participating kindergartens that meet the inclusion criteria, and obtain written consent from them to collect data from their participants. The researcher developed and distributed an informed consent form to the parents of participating children, which includes a clear explanation of the study's purpose, scope, and duration.

The researcher collected data from participating children using a questionnaire and store the data in a secure and confidential manner. The data was analyzed using statistical software, and the findings was presented in a clear and concise manner through a final report to the University Advisors and Examiners.

3.6. Methods of data analysis

The researcher obtained the result of participant's response by using different data analysis. In order to examine the strength of the relationship between screen time and language delay in the sample, Pearson product correlations computed between Digital Screen Exposure Questionnaire (DSEQ) and Social communication skill-the pragmatics checklist subscales. In addition to this the researcher used independent t-test to indicate the group's gender difference in screen time usage and social communication skill.

3.7. Ethical Consideration

Although the researcher had the permission of the director of, kindergartens and parents or guardians, also the researcher should concern the participants volunteer to answer the question of the study. Furthermore, keep their clients response confidential. The participants are not written their name. If the participant suffers any undesirable consequence, the researcher obligated to find out about them and correct them. In addition the researcher is responsible to own ethical behavior and respect full for the participants, assistant, parents and collaborators all of whom incur ethical responsibilities themselves.

3.8. Pilot Study Result

The respondents involved in this pilot study were 31 preschool children .They were 16 boys (51.6%) and 15 girls (48.4%) in the group. Most of the children were 5 years old (16, or 51.6%). After that, the next biggest group was 4-year-olds (7, or 22.6%). There were the same number of 2-year-olds and 3-year-olds, which was 4 children for each age.

Most of the parents in the group had a university degree (48.4%). The biggest part of the group (67.7%) medium economic status. A smaller number of people had lower economic status (9.7%) and (22.6%) of them had higher economic status. The results also show that most of the children did not use digital screens. Almost 68% of them only used screens for 0 to 1 hour each day. The information also suggests that most parents spent a lot of time with their children during the week. The largest number of parents report spent time with their children for 5 to 7 days each week. A challenge arises in ensuring the quality of this time amidst the pervasive presence of screens. Even when physically present, significant screen use by either parent or child during these interactions can detract from meaningful face-to-face engagement, potentially

undermining the development of crucial social communication skills that thrive on direct interaction and shared attention.

The correlational analysis showed that a very weak and statistically non-significant positive linear correlation between social communication skill and digital screen exposure in this sample of 31 participants (r=.018, p=.925). This suggests that, for this group, there is essentially no linear relationship between the scores on the social communication skill measure and the scores on the digital screen exposure measure. The observed weak positive association is likely due to chance difference within this specific sample. This finding underscores the limitations inherent in pilot studies, particularly regarding sample size and statistical power.

CHAPTER FOUR

RESULTS

This chapter describe different analysis result from the beginning of socio demographic characteristics that is used for comparative purpose. Generally, this chapter contain three tables with three major titles. The first table contain the socio demographic characteristics of the respondents. The second table is the analysis of the association between screen time and language development. The third parts of analysis of the relationship between neurodevelopmental condition , screen time usage and language development and the fourth part contains comparison of socio-demographic characteristics screen time, language development.

4.1. Socio demographic characteristics of the respondents

The respondents involved in this study were 165 children drawn from four kindergartens and daycares within the Lemikura sub-city, specifically Woreda Three. As presented in Table 1, the sample comprised 90 boys and 75 girls.

Regarding parental educational attainment, the largest proportion of parents (41.8%) held a university degree. This was followed by 19.8% who had a diploma, and 18.8% who possessed a master's degree. Additionally, 19.5% of parents had completed secondary school, 7.3% had completed primary school, and the smallest group (1.2%) held a doctorate degree. In terms of economic status, the majority of the group (78.9%) were of medium economic status. Among the 165 parents, 30 individuals (18.2%) were categorized as having a lower economic status, while a smaller number (3.6%) had a higher economic status.

The mean age of the children in the group was 3.94 years. The data also indicated that the mean screen time per day for these children was 2.3 hours. Furthermore, parents reported spending a mean of 4.33 days per week with their children. Concerning developmental status, the largest portion of the preschool children, 73.3%, were typically developing. Seventeen children (10.3%) were identified with autism spectrum disorder. This was followed by speech and language delay, affecting 12 children (7.3%), and other neurodevelopmental disorders, present in 10 children (6.1%). The smallest number of children, 5 (3%), were diagnosed with ADHD

Table 1: Socio demographic characteristics of the respondents

Variable	Values	N	%	Mean	SD
Parent Education Status	Primary school	12	7.3	3.57	1.17
	Secondary school	19	11.5		
	Diploma	32	19.5		
	Degree	69	41.8		
	Masters	31	18.8		
	Doctorate	2	1.2		
Parent Economic Status	Lower	30	18.2	1.86	0.45
	Medium	129	78.2		
	Higher	6	3.6		
Child age				3.94	0.97
Child gender	Boy	90	54.5	1.44	0.5
	Girl	75	45.5		
Child screen time per day				2.39	1.47
Parent child time per weak				4.33	2.13
Neurodevelopmental conditions	No	121	73.3%	.63	1.22
	ASD	17	10.3%		
	ADHD	5	3%		
	Speech and Language	12	7.3%		
	Delay	10	6.1%		
	Others				

4.2. The association between screen time and language development

Screen time usage and language development analyzed using person product moment correlation. There is a significance relationship between screen time and language development in preschool children .The correlation coefficient is -.418. The squared correlation is .1745 represents the proportion of variance in one variable that can be explained by the other variable. This means the approximately 17.45%of the variance in social communication skills can be explained by screen time usage or vice versa. This indicate that a moderate negative linear

relationship between the two variables. As scores on one variable increase, scores on the other tend to decrease. The p-value (significance level) is .000. This is less than the conventional alpha level of 0.01, indicating that the correlation is statistically significan**t.**

4.3. The relationship between Neurodevelopmental condition, Screen time usage and language development

The result of Pearson product coefficients shows that there is statistically significant, moderately strong negative correlation between Social Communication skill and the presence of a neurodevelopmental diagnosis ($r = -.580$, $p < .001$). This suggests that higher levels of Social Communication Skill are associated with a decreased likelihood of a child having received such a diagnosis.

In contrast, Digital Screen Exposure demonstrated a statistically significant, moderate positive correlation with the presence of a neurodevelopmental diagnosis ($r = .478$, $p < .001$). This finding indicates that higher scores on Digital screen exposure are associated with a greater likelihood of a child having been diagnosed with a neurodevelopmental condition.

The importance of strong social communication skills as a potential protective factor or indicator of typical development. Children with better social communication skills are less likely to have a neurodevelopmental diagnosis. This is relevant for early intervention efforts, screening tools, and identifying developmental milestones. If a child shows strong social communication, it suggests a lower likelihood of having a neurodevelopmental condition. The children in this study are still preschoolers (3-5 years old), regardless of any diagnostic label.

Table 3: The relationship between Neurodevelopmental condition, Screen time usage and language development

		Pearson correlation (r)	P value
Total SCS	Neurodevelopmental condition	-.58**	<.001
Total DSEQ	Neurodevelopmental condition	.48**	<.001

** .correlation is significant at the 0.01 level (2 tailed)

***Note**: Total SCS: Total of Social communication skill- The pragmatics Checklist, Total DESQ: total of Digital screen exposure questioner.*

4.4. Gender differences in screen time usage and language development

Gender difference wear analyzed using independent sample t-test. The result shows there is no significance difference in all variables, the significance value (p = 0.71) is much greater than the conventional alpha level of 0.05. Therefore, there is no statistically significant difference in the mean Total SCS scores between males and females in this sample.

Although the female mean is slightly higher (127.8) than the male mean (119.7), this difference is not statistically significant. The F value is .028, which indicates that the variances between the two groups are not significantly different (p > .05), supporting the use of the pooled variance t-test. The t-value of -1.82 corresponds to this non-significant difference in total DSEQ between males and females in this sample.

Table 4: Gender differences in screen time usage, language development.

Factors	Variables	Groups	Mean	SD	F and *t* value	Sig
	Total SCS	Male	119.7	32.22	*F*(.028)=*t*-1.82	0.71
		Female	127.8	32.12		
Gender	Total DSEQ	Male	69.52	17.9	*F*(.11= *t*-.82	.42
		Female	67.11	20.1		

4.5. Socio demographic (Parent educational status and parent) difference on child screen usage

The finding suggest that the no significant overall effect on Parent Economic Status: The Digital screen time do not significantly predict "Parent Economic Status" (p=0.108). While the R-squared was relatively high (0.432), the adjusted R-squared (0.104) and the non-significant F-test suggest the model isn't strong. The digital screen time do not significantly predict "Parent Education Status" (p=0.631). The negative adjusted R-squared further reinforces that the model is a very poor fit for explaining the variance in "Parent Education Status.

CHAPTER FIVE

DISCUSSION

5.1. The association between screen time and language development

In several study in the area of screen time on language development has shown that excessive screen time can have a negative impact on children's language skills, including delayed language development, decreased attention span, and decreased vocabulary (Hinkley & Taylor, 2012; Christakis et al., 2016). For example, a study by Hinkley and Taylor (2012) found that children who spent more than 2 hours per day watching screens had a higher risk of language delay. Similarly, a study by Christakis et al. (2016) found that for every 30-minute increase in screen time per day, there was a 9% higher risk of language delay in children. The finding of this study also significance relationship between screen time and language development in preschool children .The correlation coefficient is -.418. This indicates a moderate negative linear relationship between the two variables. As scores on one variable increase, scores on the other tend to decrease. The p-value (significance level) is .000. This is less than the conventional alpha level of 0.01, indicating that the correlation is statistically significant. Similarly to this finding result (Gath et al., 2023) find that the duration of screen exposure assessed at earlier child ages was consistently negatively associated with children's subsequent scores on measures of language and educational ability. Moreover study in Ethiopia by (Gebremichael, 2020) suggest that general impact of technology on young children in Ethiopia, noting the increasing availability and use of devices like television and mobile phones. These studies raise concerns about potential negative effects on development, including social interaction.

5.2. The relationship between Neurodevelopmental condition, Screen time usage and language development

Subsequent studies have supported the idea that extended screen time during critical developmental periods may lead to symptoms similar to those observed in classical autism spectrum disorder (ASD). In today's digital environment, screens are deeply embedded in the routines of children from infancy through adolescence, influencing their behavior and cognitive growth. Although the concept of Virtual Autism is still emerging and not officially recognized in

current diagnostic systems, it is characterized by symptoms such as delayed speech, impaired social skills, attention deficits, and repetitive behaviors, which are thought to result from excessive stimulation disrupting normal neurodevelopment. Zamfir linked these issues specifically to sensory-motor and socio-affective deprivation caused by spending more than four hours daily in virtual environments, particularly before the age of three.

Research indicates that such excessive exposure can induce neurochemical changes, including deficiencies in neurotransmitters like dopamine, acetylcholine, gamma-amino butyric acid (GABA), and 5-hydroxytryptamine (serotonin), which may underlie behavioral abnormalities (Cederlund et al., 2010; Zamfir, 2018).

While Virtual Autism shares similarities with ASD, it results primarily from environmental factors rather than genetic or neurodevelopmental causes and appears to be reversible through interventions such as reducing screen time and encouraging real-world interactions. Nonetheless, the label "Virtual Autism" carries significant implications; it might inadvertently promote stigma or misconceptions about the permanence of these developmental issues, even though some neurochemical alterations suggest potential for recovery with appropriate care (American Psychiatric Association, 2013; Cederlund et al., 2010; Zamfir, 2018).More over the finding of this study suggest that Digital Screen Exposure demonstrated a statistically significant, moderate positive correlation with the presence of a neurodevelopmental diagnosis ($r = .478$, $p < .001$). This finding indicates that higher scores on Digital screen exposure are associated with a greater likelihood of a child having been diagnosed with a neurodevelopmental condition, most likely screen time might be a root cause for virtual autism.

Moreover young children pay attention to the television in a different way than adults. They are more interested in the sensory input they receive from it; the movement, the bright colors, and the sounds (Courage & Troseth, 2016). Even if they appear to be engaged in the story, their language and comprehension skills are limited and most likely are not understanding what they are watching (Anderson & Hanson, 2010). According to the AAP (2016), children 12 to 18 months learn better from real-life scenarios and more likely to remember what they saw. This video-deficit occurs because young children are inflexible learners as they need to have the video match the real world for learning to take place. Related to the above findings this study result shows that there is statistically significant, moderately strong negative correlation between

Social Communication skill and the presence of a neurodevelopmental diagnosis ($r = -.580$, $p < .001$). This suggests that higher levels of Social Communication Skill are associated with a decreased likelihood of a child having received such a diagnosis. Limited social communication skills are frequently observed in individuals with neurodevelopmental disorders. For example, a central diagnostic feature of autism spectrum disorder involves impairments in social pragmatic abilities. Similarly, challenges in social communication are commonly seen in individuals with ADHD and children experiencing speech and language delays.

5.3 .Group differences in screen time usage and language development, daily screen time

Gath et al., (2023) present their findings separately for different demographic groups in described analysis, they did acknowledge the importance of demography by including these factors as covariates to ensure a more accurate understanding of the screen time-outcome relationship. Meanwhile they find that increases to both TV/video viewing and electronic media use with age, but a slight decrease in background television exposure.

However the finding of this study on Gender difference in screen time usage, language development and daily screen time shows there is no significance difference in all variables, the significance value ($p = 0.71$) is much greater than the conventional alpha level of 0.05. Therefore, there is no statistically significant difference in the mean Total SCS scores between males and females in this sample. Although the female mean is slightly higher (127.8) than the male mean (119.7), this difference is not statistically significant. The F value is .028, which indicates that the variances between the two groups are not significantly different ($p > .05$), supporting the use of the pooled variance t-test. The t-value of -1.82 corresponds to this non-significant difference

5.4. Socio demographic (Parent educational status and parent) difference on child screen usage

The finding suggest that the p-value (0.631) is greater than the conventional alpha level of 0.05, this suggests that there is no statistically significant difference in the mean of the outcome variable being measured across the different levels of Parent Education Status. Similarly, the p-value (0.108) for Parent Economic Status is greater than the conventional alpha level of 0.05. Therefore, there is no statistically significant difference in the mean of the outcome variable across the different levels of Parent Economic Status.

5.5. Limitation of the study

- **Insufficient sample size for statistical measurements:** Even with my best efforts in selection, the resulting sample size proved to be inadequate for conducting robust statistical analyses. This unfortunately limited the power of my statistical inferences and the generalizability of my findings.
- **Limited access to data**: A significant practical constraint I faced was restricted access to the necessary data. This directly impacted the breadth and depth of my investigation.
- Time constraints: The allocated timeframe for my research was a considerable constraint, often necessitating difficult decisions regarding the scope and depth of my investigations.
- **Lack of previous research studies on the topic:** A notable issue was the absence of a substantial body of prior research studies on my specific topic. This required me to build foundational knowledge without a strong precedent, making it challenging to design my study and interpret my findings.
- Conflicts arising from cultural bias and other personal issues related to the social pragmatics' skill scale and screen time exposure: I recognized that potential cultural bias and other personal perspectives related to the sensitive areas of social pragmatics and screen time exposure could have introduced unintended influences. Managing and acknowledging these potential biases was an important part of my reflective process.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1. Summery

The researcher was study on the topic of Screen time usage and language development in pre-school children among Lemikura sub-city. The researcher was used survey researcher design for this study and attempt to answer the following research question.

- Is there a significant correlation between the amount of screen time usage and language development in preschool children?
- Are there any demographic factors (e.g., socioeconomic status, parental education level) that moderate the relationship between screen time usage and language development in preschool children?
- Is there any gender differences in screen time usage and language development in preschool children?

The sample of this study consist of 165 participants. The researcher select these 165 children from the chosen kindergartens and daycare services using simple random sampling techniques. The study will include both male and female children aged 3 to 5 years.

The researcher used purposive sampling techniques to select the schools. Purposive sampling is a type of non-probability sampling and taking a sample purposely. To select the participant the researcher used simple random sampling techniques, specifically a table of random numbers was utilized to identify the specific individuals for inclusion in the sample. After obtaining the informed consent of the participants. The pre –school children parents are provided with self-report questioner which consists of Digital Screen Exposure Questionnaire (DSEQ) to measure the amount and type of screen time. Language development was assessed by using Social communication skill-the pragmatics checklist to evaluate key language milestones. The collected data was analyzed by using SPSS 27. Mean and standard deviations were calculated for continuous variables, and frequencies and percentages for categorical variables to see the distribution of demographic.

Person product moment correlation coefficient wear also used for the association screen time usage and language development, relationship between Neurodevelopmental condition, Screen time usage and language development.

For Group differences in screen time usage and language development, daily screen time the researchers used Independent –t test. And MANOVA were used to describe the difference among reset of socio-demographics (Parent educational status and parent) difference on child screen usage.

As the table 1 show the findings of these study revealed that there were 90 boys (55.5%) and 75 girls (45.5%) in the group. There is a significance relationship between screen time and language development in preschool children .The correlation coefficient is -.418. This indicates a moderate negative linear relationship between the two variables. The finding suggest that there is statistically significant, moderately strong negative correlation between Social Communication skill and the presence of a neurodevelopmental diagnosis ($r = -.580$, $p < .001$).

The result shows that there is no statistically significant difference in the mean Total SCS scores between males and females in this sample. The t-value of -1.82 corresponds to this non-significant difference in total DSEQ between males and females in this sample. The finding suggest that there is no statistically significant difference in the mean of the outcome variable across the different levels of Parent Economic Status and educational status.

6.2. Conclusion

Based on the research question and finding of the study the researcher conclude as follow.

- The first research question of these study is to investigate the significant the correlation between the amount of screen time usage and language development in preschool children. Based on these the researcher found that a negative linear relationship between the two variables (screen time usage and language development) the correlation coefficient is -.418. The p-value (significance level) is .000. This is less than the conventional alpha level of 0.01.The result indicates that as scores on one variable increase, scores on the other tend to decrease.
- The second research question of the study is elaborate if there is any demographic factors (e.g., socioeconomic status, parental education level) that moderate the relationship between screen time usage and language development in preschool children. The finding suggest that the p-value (0.631) is greater than the conventional alpha level of 0.05, this suggests that there is no statistically significant difference in the mean of the outcome variable being measured across the different levels of Parent Education Status. Similarly, the p-value (0.108) for Parent Economic Status is greater than the conventional alpha level of 0.05. Therefore, there is no statistically significant difference in the mean of the outcome variable across the different levels of Parent Economic Status.
- The third research question is to examine gender differences in screen time usage and language development in preschool children. Gender difference in screen time usage, language development and daily screen time shows no significance difference in both variables, the significance value ($p = 0.71$) is much greater than the conventional alpha level of 0.05. Therefore, there is no statistically significant difference in the mean Total SCS scores between males and females in this sample. Although the female mean is slightly higher (127.8) than the male mean (119.7), this difference is not statistically significant. The F value is .028, which indicates that the variances between the two groups are not significantly different ($p > .05$), supporting the use of the pooled variance t-test. The t-value of -1.82 corresponds to this non-significant difference.
- The fourth research question of the study was investigate the association between screen time, language development and neurodevelopmental conditions in preschool children.

The finding of this study suggest that Digital Screen Exposure demonstrated a statistically significant, moderate positive correlation with the presence of a neurodevelopmental diagnosis ($r = .478$, $p < .001$). This finding indicates that higher scores on Digital screen exposure are associated with a greater likelihood of a child having been diagnosed with a neurodevelopmental condition, most likely screen time might be a root cause for virtual autism. This study suggest that there is statistically significant, moderately strong negative correlation between Social Communication skill and the presence of a neurodevelopmental diagnosis ($r = -.580$, $p < .001$). This suggests that higher levels of Social Communication Skill are associated with a decreased likelihood of a child having received such a diagnosis. Limited social communication skills are frequently observed in individuals with neurodevelopmental disorders. For example, a central diagnostic feature of autism spectrum disorder involves impairments in social pragmatic abilities. Similarly, challenges in social communication are commonly seen in individuals with ADHD and children experiencing speech and language delays.

6.3. Recommendations

Based on the findings of current study and conclusions drawn, the researcher forwards the following suggestions.

1. Parents should actively and thoughtfully manage their children's exposure to screens. This involves setting clear, consistent boundaries, establishing routines that limit media consumption, and, critically, prioritizing direct interaction and real-world experiences. Increased parental involvement and shared activities, particularly outdoor play and face-to-face communication, are pivotal for supporting robust language development.
2. Advocate for a strong partnership among parents, early learning educators (including pre-kindergarten settings), and specialists like child psychologists and speech-language pathologists. This collaboration should focus on developing and implementing proactive interventions to bolster children's social communication abilities. Moreover, widespread awareness campaigns are vital to inform parents and guardians about their crucial influence on screen time habits and the direct link to their children's language

development. Such initiatives should also integrate training modules designed to cultivate essential social communication.

3. Educational institutions, especially those catering to young children, ought to significantly emphasize and facilitate outdoor play. These activities consistently provide invaluable opportunities for spontaneous social engagement, cooperative play, and the organic advancement of social communication skills, which are often curtailed by excessive screen exposure.
4. Future researchers in this field should prioritize developing and validating culturally sensitive research instruments. It need tools that can accurately measure screen exposure and language development across diverse populations, taking into account different cultural norms and practices. Future research should investigate how diverse social and cultural contexts shape patterns of screen usage and their consequent impact on language development

References

Abdeta, A., et al. (2024). Adherence to the WHO physical activity, screen time and sleep guidelines and associations with socio-demographic factors among Ethiopian preschool children: The SUNRISE study. Journal of Activity, Sedentary and Sleep Behaviors, 3(1), 22.

Alawami, A. H., Perrin, E. C., & Sakai, C. (2019). Implementation of M-CHAT screening for autism in primary care in Saudi Arabia. Global Pediatric Health, 6. https://doi.org/10.1177/2333794X19852021

American Academy of Pediatrics. (2016). Media and young minds. Pediatrics, 138(5), e20162591. https://doi.org/10.1542/peds.2016-2591

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.

Andersen, K. G., Rambaut, A., Lipkin, W. I., Holmes, E. C., & Garry, R. F. (2020). The proximal origin of SARS-CoV-2. Nature Medicine, 26(4), 450–452. https://doi.org/10.1038/s41591-020-0820-9

Anderson, D. R., & Subrahmanyam, K. (2017). Digital screen media and cognitive development. Pediatrics, 140(2), S57-S61. https://doi.org/10.1542/peds.2016-1758C

Barr, R., & Linebarger, D. L. (2015). A review of the effects of screen time on the language development of preschool children. Journal of Children, Media and Culture, 9(1), 1-15.

Boeing, J. (2019). Parental screen time: The impacts on a child's speech development (Master's thesis, Xavier University).

Bruner, J. S. (1983). Child's talk: Learning to use language. W. W. Norton & Company.

Bushman, B. J., & Huesmann, L. R. (2006). Is there a causal link between media violence and aggression? Journal of Social Issues, 62(3), 603-621.

Cain, N., & Gradisar, M. (2010). Electronic media use and sleep in school-aged children and adolescents: A review. Sleep Medicine, 11(8), 735-742.

Cederlund, R., Hagberg, B., & Gillberg, C. (2010). Autism spectrum disorders in children and adolescents: Neuropsychiatric aspects. Clinical Neuropsychiatry, 7(2), 85-96.

Chiong, C., & Wartella, E. (2007). Media and children's development in the first three years. Zero to Three, 27(5), 20-27.

Chomsky, N. (1957). Syntactic structures. The Hague: Mouton.

Chonchaiya, W., & Pruksananonda, C. (2008). Television viewing is associated with delayed language development. Acta Paediatrica, 97(7), 977-982. https://doi.org/10.1111/j.1651-2227.2008.00866.x

Christakis, D. A. (2010). The effects of infant media usage: What do we know and what should we learn? Acta Paediatrica, 99(1), 8-16.

Christakis, D. A. (2014). Interactive media use at younger than the age of 2 years: Time to rethink the American Academy of Pediatrics guidelines JAMA Pediatrics, 168 (5), 399-400. https://doi.org/10.1001/jamapediatrics.2013.5081

Christakis, D. A., Garrison, M. M., & Ebel, B. E. (2009). Television, video, and computer game usage in children under 2 years old. Pediatrics, 123(5), e1005-e1010. https://doi.org/10.1542/peds.2008-2020

Christakis, D. A., Zimmerman, F. J., DiGiuseppe, D. L., & McCarty, C. A. (2016). Early television exposure and subsequent attention problems in children. Journal of the American Medical Association, 316(17), 1749-1755.

Council on Children and Disasters. (2018). Media use in children and adolescents. Pediatrics, 141(3), e20182851.

Council on Children and Disasters. (2023). Media use in children and adolescents. Pediatrics, 151(3), e2023000495.

Gath, M., Gillon, G., McNeill, B., & Woodward, L. (2023, May). Assessing the impact of screen time on children's language, educational ability, and social functioning from infancy to age 8. University of Canterbury

Gebremichael, T. M. (2020). The impact of use of technology in early childhood development [Master's thesis, University of Tartu].

Gentile, D. A., Reimer, R. A., Nath, D., & Walsh, D. A. (2014). Assessing the effects of violent video games on children: A review of the evidence. Journal of Applied Developmental Psychology, 35, 521-538.

Heffler, K. F., Frome, L. R., & Gullo, D. F. (2022). Changes in autism symptoms associated with screen exposure: Case report of two young children. *Psychiatry Research Case Reports*, 1(2), 100059. https://doi.org/10.1016/j.psycr.2022.100059

Hertz, M., Jelen, A., & Jelen, K. (2007). Cyberbullying: A review of the literature. Computers in Human Behavior, 23(5), 2754-2766.

Hinkley, T., & Taylor, M. (2012). The impact of television on the language development of preschool children. Journal of Applied Developmental Psychology, 33(5), 273-278.

John, S., Kumar, S., & Thomas, R. (2021). Screen time and cognitive delays among preschoolers in Kerala. Journal of Indian Child Psychology, 23(2), 98-106.

Kaur, N., Gupta, M., Malhi, P., & Grover, S. (2021). Development and evaluation of the digital-screen exposure questionnaire (DSEQ) for young children. PLOS ONE, 16(6), e0253313. https://doi.org/10.1371/journal.pone.0253313

Kim, J., Lee, Y., & Kim, B. (2022). The effects of educational apps on preschool children's math skills and problem-solving abilities: A systematic review. Computers in Human Behavior, 134, 103475.

Kirkorian, H. L., Wartella, E., & Anderson, D. R. (2009). Media and young children's learning. The Future of Children, 19(1), 39-61. https://doi.org/10.1353/foc.0.0028

Kuhl, P. K. (2013). Language development in infancy and early childhood. Journal of Child Psychology and Psychiatry, 54(3), 281-291.

Kunkel, D., Eyal, K., Finnerty, K., Biely, E., Rideout, V., & Donnerstein, E. (2005). Sex on TV 4: A biennial report by the Kaiser Family Foundation. Kaiser Family Foundation.

Lan, J., Ge, J., Yu, J., Shan, S., Yuan, T., et al. (2020). Clinical review of COVID-19: Implications for children. The Journal of Pediatrics, 226, 20–28. https://doi.org/10.1016/j.jpeds.2020.04.016

Lee, S., Park, S. & Kim, Y. (2022). Impact of increased screen time on mental health of preschool children during COVID-19 pandemic: A longitudinal study. Journal of Child Psychology and Psychiatry, 63(3), 314-322. https://doi.org/10.1111/jcpp.13636

Lin, L. Y., Sidani, J. E., Shensa, A., et al. (2015). Association between social media use and depression among U.S. young adults. Depression and Anxiety, 32(4), 283-290. https://doi.org/10.1002/da.22229

Linebarger, D. L., & Piotrowski, J. T. (2010). Television as a learning tool for young children. Zero to Three, 30(3), 47-53.

Lynne Hall. (2025). Digital learning or digital delay? How screen time affects early literacy. Early Learning Insights. https://www.earlylearninginsights.com/digital-learning-delay

Madigan, S., McArthur, B. A., Anhorn, C., & Subedi, S. (2019). Association between screen time and children's performance on a developmental screening test. JAMA Pediatrics, 173(3), 244-250.

Maital, S., & Barzani, E. (2020). COVID-19 and mental health: The impact of lockdowns, social distancing, and digital technology usage. Psychology, Health & Medicine, 25(1), 1–8. https://doi.org/10.1080/13548506.2020.1778444

Martínez-González, A., Cervin, M., & Piqueras, J. A. (2022). Emotion regulation and social communication in autism spectrum disorder: A review. Journal of Autism and Developmental Disorders, 52(4), 1503-1515.

Mills, R., Kearney, S., & Hayashi, Y. (2022). Variability in autism spectrum disorder symptoms: Implications for intervention. Autism Research, 15(7), 1245-1256.

Pellegrini, A. D., & Gustafson, K. (2005). The role of recess in children's cognitive performance and school adjustment. Educational Psychologist, 40(1), 36-49. https://doi.org/10.1207/s15326985ep4001_4.

Piaget, J. (1954). The construction of reality in the child. Basic Books.

Radesky, J. S., Christakis, D. A., Kistin, C. J., Zahn-Waxler, C., Nader, P. R., Mendelsohn, A. L., & Swanson, W. S. (2015). Infant media viewing and later language delay. JAMA Pediatrics, 169(10), 963-971.

Rideout, V. J. (2015). The common sense census: Media use by tweens and teens. Common Sense Media.

Roseberry, S., Hirsh-Pasek, K., Parish-Morris, J., & Golinkoff, R. M. (2009). The effects of media on language development. Developmental Psychology, 45(4), 1137–1144. https://doi.org/10.1037/a0015833

Sampson, J., Adams, C., & Liu, H. (2022). Screen time and sleep duration in young children: Implications for emotional and behavioral health during pandemic-related restrictions. Pediatric Research, 92(4), 756-763. https://doi.org/10.1038/s41390-022-02039-5

Samson, F., Mottron, L., & Berthiaume, C. (2014). Sensory processing in autism spectrum disorders: A review. International Journal of Developmental Neuroscience, 33, 55-64.

Schmidt, M. E., Pempek, T. A., Kirkorian, H. L., Lund, A. F., & Anderson, D. R. (2020). The effects of background television on the toy play behavior of very young children. Child Development, 79(4), 1137–1151. https://doi.org/10.1111/j.1467-8624.2008.01180.x

Sharma, S., Jain, V. K., & Sharma, R. (2025). Virtual autism: Understanding the effects of excessive screen exposure on cognitive and social development. Disease and Health: Research Developments, 10, 37-42. https://doi.org/10.9734/bpi/dhrd/v10/5219

Singh, S., & Balhara, Y. P. S. (2021). Screen-time in children and adolescents during COVID-19: The need for a contextually informed approach. Indian Journal of Psychiatry, 63(2), 192–196. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_646_20

Skinner, B. F. (1957). Verbal behavior. Appleton-Century-Crofts.

Snow, C. E. (1977). Mother's speech to children learning language. Child Development, 48(2), 549-565.

Stewart, T. M., et al. (2019). Trends in screen exposure and its impact on child development: Evidence from the Growing Up in New Zealand study. Child Development Perspectives, 13(3), 145-150. https://doi.org/10.1111/cdep.12345

Tessema, F., et al. (2025). Child-, Family-, and Community-Level Correlates of 24-Hour Movement Behaviors in Ethiopian Young Children. Journal of Physical Activity and Health, ahead-of-print.

Tiruneh, M. A., et al. (2017). Overweight/Obesity and associated factors among preschool children in Gondar City, Northwest Ethiopia: A cross-sectional study. PubMed.

Tomasello, M. (2003). Constructing a language: A usage-based theory of language acquisition. Harvard University Press.

Twenge, J. M., Martin, G. N., & Campbell, W. K. (2018). Decreases in psychological well-being among American adolescents after 2012 and links to increased new media screen time. Preventive Medicine, 114, 154-161.

Vrinda, R., Maria, G., & Swathi, N. (2021). Parental awareness of screen time effects on toddlers. International Journal of Child Health and Human Development, 14(3), 245-253.

Vygotsky, L. S. (1978). Interaction between learning and development. Readings on the development of children, 22-27.

Wagaye Kefene, S., Guyo, T. G., Assefa, D. T., Chisha, Y., & Sorrie, M. B. (2024). Predictors of Overweight/Obesity among Preschool Children in Arba Minch City, Southern Ethiopia. International Journal of Public Health, 69, 1607017.

Wong, C. W., Tsai, A., Jonas, J. B., Ohno-Matsui, K., Chen, J., Ang, M., & Ting, D. S. W. (2021). Digital screen time during the COVID-19 pandemic: Risk for a further myopia boom? American Journal of Ophthalmology, 223, 333-337. https://doi.org/10.1016/j.ajo.2020.07.034

Wong, S. L., Kwan, M., & Chan, S. T. (2021). The impact of COVID-19 on sleep, physical activity, and mental health among children and adolescents. International Journal of Environmental Research and Public Health, 18(4), 1908.

Zamfir, M. (2018). Virtual autism: Exploring behavioral abnormalities associated with early screen exposure. Journal of Child Development Research, 2018, 1–8.

Zimmerman, F. J., & Christakis, D. A. (2007). Associations between content types of early media exposure and subsequent attentional problems in children. Pediatrics, 120(5), 986-992. https://doi.org/10.1542/peds.2006-3322

Zubair, M. (2018). The impact of screen time on language skills in preschoolers. Journal of Applied Developmental Psychology, 60, 162-172. doi: 10.1016/j.appdev.2018.03.005.

Zubair, M., & Khan, M. I. (2020). The impact of screen time on the language development of preschool children: A systematic review. Journal of Education and Human Development, 9(2), 1-13.

ANNEX

ANNEX A: ENGLISH VERSION

Addis Ababa University

College of Education and Behavioral Studies

School of Psychology

Dear Parents, I am a graduate student in Developmental Psychology (MA) at Addis Ababa University, School of Psychology. For my research, I am conducting a study in the Lemikura sub-city on the relationship between screen time usage and language development in preschool children.

You are invited to participate in this research study by completing the following questions. Thank you for taking the time to assist me. Please do not write your name; instead, put an "X" mark in the box next to the point that most reflects your idea. All information will be used for academic purposes only and will be treated confidentially. Your honest and unbiased responses will greatly contribute to the research achieving its objective.

Part 1: Demographic Data

Directions: please complete the following general demographics survey by putting a check mark on the space provided.

1. Parent Education Status: 1). primary school 2).Preparatory 3).Diploma 4).Degree 5).Doctorate

2. Parent Economic Status: 1).Lower 2).Medium 3). Higher

3. Child age _____

4. Child gender: 1).Boy 2).Girl

5. How many hours does your child spend on screen in a day? _____

6. How many days do you spend with your child in a weak? _____

7. Please indicate if your child has been diagnosed with any neurodevelopmental condition…

Part 2: Dear parents, the following points refer to your child's Social Communication Skills. Please put an "X" mark against each point to indicate your level of agreement as 'Not present,' 'No uses words (Gestural),' 'Uses 1-3 words,' or 'Uses complex language.' Thank you for your responses in advance.

No	Domains	Not present	No uses words (Gestural)	uses 1-3 words	uses complex language
	Instrumental- State needs (I want….)				
1	Makes polite requests	①	②	③	④
2	Makes choices	①	②	③	④
3	Gives description of an object wanted	①	②	③	④
4	Expresses a specific personal need	①	②	③	④
5	Requests help	①	②	③	④
	Regulatory - Gives commands (Do as I tell you…)				
6	Gives directions to play a game	①	②	③	④
7	Gives directions to make something	①	②	③	④
8	Changes the style of commands or requests depending on who the child is speaking to and what the child wants	①	②	③	④
	Personal - Expresses feelings				
9	Identifies feelings (I'm happy.)	①	②	③	④
10	Explains feelings (I'm happy because it's my birthday)	①	②	③	④
11	Provides excuses or reasons	①	②	③	④
12	Offers an opinion with support	①	②	③	④

13	Complains	①	②	③	④
14	Blames others	①	②	③	④
15	Provides pertinent information on request (2 or 3 of the following: name, address, phone, birthdate)	①	②	③	④
	Interactional - Me and You…				
16	Interacts with others in a polite manner	①	②	③	④
17	Uses appropriate social rules such as greetings, farewells, thank you, getting attention	①	②	③	④
18	Attends to the speaker	①	②	③	④
19	Revises/repairs an incomplete message	①	②	③	④
20	Initiates a topic of conversation (doesn't just start talking in the middle of a topic)	①	②	③	④
21	Maintains a conversation (able to keep it going)	①	②	③	④
22	Ends a conversation (doesn't just walk away)	①	②	③	④
23	Interjects appropriately into an already established conversation with others	①	②	③	④
24	Makes apologies or gives explanations of behavior	①	②	③	④
25	Requests clarification	①	②	③	④
26	States a problem	①	②	③	④
27	Criticizes others	①	②	③	④
28	Disagrees with others	①	②	③	④
29	Compliments others	①	②	③	④

30	Makes promises	①	②	③	④
	Wants explanations - Tell me Why…				
31	Asks questions to get more information	①	②	③	④
32	Asks questions to systematically gather information as in "Twenty Questions"	①	②	③	④
33	Asks questions because of curiosity	①	②	③	④
34	Asks questions to problem solve (What should I do? How do I know?)	①	②	③	④
35	Asks questions to make predictions (What will happen if…?)	①	②	③	④
	Shares knowledge & imaginations -I've got something to tell you…				
36	Role plays as/with different characters	①	②	③	④
37	Role plays with props (e.g., banana as phone)	①	②	③	④
38	Provides a description of a situation which describes the main events	①	②	③	④
39	Correctly re-tells a story which has been told to them	①	②	③	④
40	Relates the content of a 4-6 frame picture story using correct events for each frame	①	②	③	④
41	Creates an original story with a beginning, several logical events, and an end	①	②	③	④
42	Explains the relationship between two objects, actions or situations	①	②	③	④
43	Compares and contrasts qualities of two objects, actions or situations	①	②	③	④
44	Tells a lie	①	②	③	④
45	Expresses humor/sarcasm	①	②	③	④

Part 3: Dear parents the following points refer to your child Screen time usage. Put an "X" mark against each point to indicate your level of agreement as 'Never,' 'Sometimes,' 'Often,' or 'Always.

No items	**Domains**	Never	Sometimes	Often	Always.
	Domain 1: Screen time exposure and Home media environment				
1	What is the frequency of watching television in a typical week?	①	②	③	④
2	Duration of watching television on a typical working day?	①	②	③	④
3	Duration of watching television on a typical holiday?	①	②	③	④
4	Does the child watch television supervision frequency by an adult?	①	②	③	④
5	What is the frequency of using smartphone in a typical week?	①	②	③	④
6	Duration of using smartphone on a typical working day?	①	②	③	④
7	Duration of using smartphone on a typical holiday?	①	②	③	④
8	Does the child us smartphone supervision frequency by an adult?	①	②	③	④
9	What is the frequency of watching laptop/ computer in a typical week?	①	②	③	④
10	Duration of watching laptop/ computer on a typical working day?	①	②	③	④
11	Duration of watching laptop/ computer on a typical holiday?	①	②	③	④
12	Does the child watch laptop/ computer supervision frequency by an adult?	①	②	③	④
13	Do you have any rules regarding when, where, what & how to watch digital screen?	①	②	③	④

14	Average duration of screen time per day of the caretaker	①	②	③	④
	Domain2:Level of physical activity				
15	Average duration of outside play per day on working/ school days	①	②	③	④
16	Average duration on holidays of outside play per day	①	②	③	④
	Domain3:Media behaviors of the child				
17	The child uses digital media gadgets for completing homework assignments online	①	②	③	④
18	The child uses video calling applications to talk to the family/ friends	①	②	③	④
19	The child uses digital media gadgets for learning poems, rhymes, alphabets etc.	①	②	③	④
20	The child uses digital media gadgets to learns math's, numbers, tables	①	②	③	④
21	The child uses digital media gadgets to recognize shapes/ sounds/colors	①	②	③	④
22	The child uses digital media gadgets to learns various sciences online	①	②	③	④
23	The child uses digital media gadgets to learns to draw/ write 0.62¥ 0.62$	①	②	③	④
24	The child plays video-games on digital media gadgets	①	②	③	④
25	The child uses digital media gadgets to watches stories	①	②	③	④
26	26. The child uses digital media gadgets to watch adult programs (soap, opera, news, sports, movies etc.) on media screens online	①	②	③	④
27	The child uses digital media gadgets to learns letters, words, vocabulary, language online	①	②	③	④
28	Digital media gadgets to watch random things for enjoyment (music, advertisements, click photos etc.)	①	②	③	④

ANNEX B: AMHARIC VERSION

አዲስ አበባ ዩኒቨርሲቲ

የትምህረትና ስነ-ባህሪ ጥናት ኮሌጅ

ሳይኮሎጂ ትምህርት ክፍል

ዉድ ወላጆች እኔ በአዲስ አበባ ዩኒቨርስቲ የድህረ ምረቃ ድቭሎፕመታል ሳይኮሎጂ ተመራቂ ተማሪ ነኝ። ይህን መጠይቅ የማስሞላው ለወላጆች ሲሆን የጥናቱ ዋና አላማም የልጆች ዲጂታል ስክሪን አጠቃቀም እና የቋንቋ ችሎታ ጋር ያለውን ግንኙነት ለማጥናት ታስቦ ነው። መጠይቁን በጥንቃቄ ይሞሉ ዘንድ በትህትና እየጠየቅኩ ጥናቱ እንዲሳካ በእርስዎ በኩል ለተደረገልኝ ትብብር አስቀድሜ በጣም አመሰግናለሁ። በመጠይቁ ላይ የሚሞላ ማንኛውም መረጃ በሚስጥር የሚጠበቅ መሆኑን አረጋግጣለሁ። ይህ ጥናት አላማው ለትምህርት እና ለጥናት ስራ ብቻ የሚውል ይሆናል። በመጠይቁ ላይ ስም መፃፍ አያስፈልግም፣ እያንዳንዱ ጥያቄ መጠይቁን በሚሞላው/በምትሞላው ሰው የግል እይታ የሚወሰን ነዉ፤ በመሆኑ ትክክል ወይም ስህተት የሚባል መልስ የለውም። ለቀረቡት ሁሉም ጥያቄዎች መልስ ሊሰጣቸው ይገባል።

ክፍል አንድ፡ ከዚህ ቀጥሎ የእርስዎን እና የልጅዎ አጠቃላይ መረጃ በሚመለከት ጥያቄዎች ቀርበዋል። ጥያቄዎቹ በክፍት ቦታ እና በምርጫ መልክ የቀረቡ በመሆኑ ክፍት ቦታው ላይ በመፃፍ እንዲሁም ምርጫዎችን ደግሞ ቁጥሩን በማክበብ ይመልሱ።

1.የእርስዎ የትምህርት ደረጃ 1)1 ኛ ደረጃ ት/ቤት የጨረሰ/ች 2) 2ኛ ደረጃ የጨረሰ/ች 3) ዲፕሎማ

4) የመጀመርያ ድግሪ 5) ሁለተኛ ድግሪ 6) ዶክትሬት.

2.የወላጆች የኢኮኖሚ ደረጃ 1) ዝቅተኛ 2) መካከለኛ 3) ከፍተኛ

3. የልጅዎ እድሜ _____

4. የልጅዎ ጾታ 1) ወንድ 2) ሴት

5. ልጅዎ በቀን ምን ያህል ሰኣት በስክሪን ላይ ያሳልፋል/ለች? _____ (ሰኣታት በቀን)

6. በሳምንት ምን ያህል ቀናትን ከልጅዎት ጋር ያሳልፋሉ? _____ (ቀናትን በሳምንት)

7.ልጅዎ የኣእምሮ እክል እዳለበት በምርመራ ከተረጋገጠ ብቻ የእክሉን ስም ይፃፉ _____

ክፍል ሁለት፡ ዉድ ወላጆች የሚከተሉት ዓረፍተ ነገሮች የልጅዎትን የማህበራዊ ግንኙነት ክህሎት የተመለከቱ ናቸው። በእያንዳንዱ ዓረፍተ ነገሮች ላይ ያለዎትን ሃሳብ ምንም መላሽ ኣይሰጥም ፣ ቃላት አይጠቀምም (ምልክት ይጠቀማል)፣ 1-3 ቃላት ይጠቀማል ፣ የተራቀቀ ቋንቋ ይጠቀማል ከሚሉት አማራጮች እየመረጡ፣ በሚስማማዎ ላይ “X”ን በመጻፍ ያመልክቱ። ሁሉንም ጥያቄዎች ስለመመለስዎ አስቀድመን እናመሰግናለን።

ተ.ቁ		ምንም መላሽ ኣይሰጥም	ቃላት አይጠቀምም(ምልክት ይጠቀማል)	1-3 ቃላት ይጠቀማል	የተራቀቀ ቋንቋ ይጠቀማል
1	በትህትና ጥያቄ ያቀርባል	①	②	③	④
2	የሚፈልገዉን ይመርጣል	①	②	③	④
3	የሚፈልገውን ነገር በዝርዝር ይገልጻል	①	②	③	④
4	የተወሰነ የግል ፍላጎትን ይገልጻል	①	②	③	④
5	እርዳታ ይጠይቃል	①	②	③	④
6	ጨዋታ ለመጫወት መመሪያዎችን ይሰጣል	①	②	③	④
7	የሆነ ነገር ለመፍጠር ትእዛዝ ይሰጣል	①	②	③	④
8	ከማን ጋር እንደሚነጋገር ወይም ምን እንደሚፈልግ በመረዳት የትእዛዝ ዘይቤን ይለውጣል	①	②	③	④
9	ስሜቶችን ይገልጻል (ለምሳሌ፡- "ደስተኛ ነኝ")	①	②	③	④
10	ስሜቶችን ያብራራል (ለምሳሌ፡- "ደስተኛ ነኝ ምክንያቱም የልደቴ ቀን ነው")	①	②	③	④
11	ምክንያት ወይም አመክንዮ ይጠቀማል/ለች	①	②	③	④
12	ገንቢ አስተያየት ይሰጣል/ለች	①	②	③	④

13	ቅሬታውን/ዋን ያቀርባል/ለች	①	②	③	④
14	ሌሎችን ይወቀሳል/ለች	①	②	③	④
15	ስለ ራሱ ሲጠየቅ ሙሉ መረጃ ይሰጣል/ለች (ስም፣ አድራሻ፣ እድሜ ፣ የውልደት ቀን ወዘተ.)	①	②	③	④
16	ከሌሎችን ጋር በትሁትነት ይግባባል	①	②	③	④
17	ተገቢ የሆኑ ማህበራዊ ደንቦች ይተገብራል (ሰላምታ፣ ምስጋና ፣ቻው ፣ ይቅርታ ወዘተ)	①	②	③	④
18	ለተናጋሪው ትኩረት ይሰጥል	①	②	③	④
19	ያልተሟላ መልዕክት ያስተካክላል	①	②	③	④
20	የንግግር ርዕሰ ጉዳይ ያስጀምራል (ከመሃል አይጀምርም/አትጀምርም)	①	②	③	④
21	ውይይትን ይቀጥላል/ላለች	①	②	③	④
22	ውይይትን በትክክል ይጨርሳል (አያቋርጥ/ጣ አይሂድም)	①	②	③	④
23	በተጀመረ ውይይት ላይ በትክክል ይገባል/ይሳተፋል	①	②	③	④
24	ይቅርታ ይጠይቃል ወይም ለድርጊቱ ማብራሪያ ይሰጣል	①	②	③	④
25	ማብራርያ ይጠይቃል	①	②	③	④
26	የተቸገረበትን ነገር ይገልጻል	①	②	③	④
27	ሌሎችን ይተቻል	①	②	③	④
28	ከሌሎች ጋር አይስማማም	①	②	③	④
29	ሌሎችን ያመሰግናል	①	②	③	④
30	ቃል ይገባል	①	②	③	④

31	ተጨማሪ መረጃ ለማግኘት ጥያቄዎችን ይጠይቃል	①	②	③	④
32	እስከ "20 ጥያቄዎች" ያሉ የማጣቀሻ ጥያቄዎችን ይጠይቃል	①	②	③	④
33	ከጉጉት የተነሳ ጥያቄዎችን ይጠይቃል	①	②	③	④
34	ችግር ለመፍታት ጥያቄዎችን ይጠይቃል ("ምን ማድረግ አለብኝ?")	①	②	③	④
35	የወደፊት ክስተቶችን ለመገመት ጥያቄዎችን ይጠይቃል (" እንዲሂ ቢሆን ምን ይሆናል/ይፈጠራል ...?")	①	②	③	④
36	እንደ ተለያዩ ገጸባህሪያት አስመስሎ ይጫወታል /ለች	①	②	③	④
37	እቃዎችን በምናብ ይጠቀማል (ለምሳሌ፡- ሙዝን እንደ ስልክ... ወዘተ)	①	②	③	④
38	ዋና ክስተቶችን የያዘ ማብራርያ ይሰጣል /ለች	①	②	③	④
39	የተነገረውን ተረት በትክክል ይደግማል/ለች	①	②	③	④
40	ከ4-6 ምስል የያዘ ተረት በትክክል ይናገራል/ለች	①	②	③	④
41	የራሱን ተረት ይፈጥራል (መጀመርያ ፣ ከዝያ ፣ መጨረሻ ያካትታል)	①	②	③	④
42	በሁለት ነገሮች /ድርጊቶች መካከል ያለውን ግንኙነት ያብራራል	①	②	③	④
43	የሁለት ነገሮችን ባህሪያት ያወዳድራል	①	②	③	④
44	ውሸት ይናገራል	①	②	③	④
45	ቀልድ ይቀልዳል	①	②	③	④

ክፍል ሦስት፡ ዉድ ወላጆች የሚከተሉት ዓረፍተ ነገሮች የልጅዎትን ዲጂታል ስክሪን አጠቃቀም የተመለከቱ ናቸው። በእያንዳንዱ ዓረፍተ ነገሮች ላይ ያለዎትን ሃሳብ በጭራሽ ፣ አልፎ አልፎ ፣ ኣብዛኛው ጊዜ፣ ሁል ጊዜ ከሚሉት አማራጮች እየመረጡ፣ በሚስማማዎ ላይ “X”ን በመጻፍ ያመልክቱ። ሁሉንም ጥያቄዎች ስለመመለስዎ አስቀድመን እናመሰግናለን።

ተ.ቁ		በጭራሽ	አልፎ አልፎ	ኣብዛኛው ጊዜ	ሁል ጊዜ
1	በሳምንት ውስጥ ቴሌቪዥን የማየት ድግግሞሽ ምን ያህል ነው?	①	②	③	④
2	በሥራ ቀን ቴሌቪዥን የማየት ጊዜ?	①	②	③	④
3	በዕረፍት ቀን ቴሌቪዥን የማየት ጊዜ?	①	②	③	④
4	ልጁ ቴሌቪዥን በሚያይበት ጊዜ በአዋቂ ቁጥጥር ይደረግለታል?	①	②	③	④
5	በሳምንት ውስጥ ስልክ የሚጠቀምበት ድግግሞሽ?	①	②	③	④
6	በሥራ ቀናት ስማርትፎን / ስልክ የሚጠቀምት ጊዜ?	①	②	③	④
7	በዕረፍት ቀን ስማርትፎን የሚጠቀምበት ጊዜ?	①	②	③	④
8	ልጁ ስማርትፎን /ስልክ በሚጠቀምበት ጊዜ በአዋቂዎች ቁጥጥር ይደረግልታል?	①	②	③	④
9	በሳምንት ውስጥ ላፕቶፕ/ኮምፒውተር የሚያይበት ድግግሞሽ?	①	②	③	④
10	በሥራ ቀናት ላፕቶፕ/ኮምፒውተር የሚያይበት ጊዜ?	①	②	③	④
11	በዕረፍት ቀናት ላፕቶፕ/ኮምፒውተር የሚያይበት ጊዜ?	①	②	③	④
12	ልጁ ላፕቶፕ/ኮምፒውተር በሚያይበት ጊዜ በአዋቂዎች ቁጥጥር ይደረግለታል?	①	②	③	④
13	ዲጂታል ስክሪን በሚጠቀምት ጊዘ (መቼ፣ የት፣ ምን፣ እንዴት) የሚሉ ህጎች አሉን?	①	②	③	④
14	ልጁን የሚይዝ የቤተሰብ አካል በቀን የሚሳልፍበት አማካይ	①	②	③	④

	የስክሪን ጊዜ				
15	በሥራ/ትምህርት ቀናት ውስጥ ከጊቢ ውጪ ጨዋታ አማካይ ጊዜ (በቀን)	①	②	③	④
16	በዕረፍት ቀናት ውስጥ የውጪ ጨዋታ አማካይ ጊዜ (በቀን)	①	②	③	④
17	ልጁ ዲጂታል መሣሪያዎችን የቤት ስራ ለመስራት ይጠቀማል	①	②	③	④
18	ልጁ በቪዲዮ Call ከቤተሰብ/ጓደኞች ጋር ለመገናኘት ይጠቀማል	①	②	③	④
19	ልጁ ዲጂታል መሣሪያዎችን ፊደላት፣ መዝሙሮችን ለመማር ይጠቀማል	①	②	③	④
20	ልጁ ዲጂታል መሣሪያዎችን ቁጥሮችን ለመማር ይጠቀማል	①	②	③	④
21	ልጁ ዲጂታል መሣሪያዎችን ቅርጾች/የፊደላት፣ ድምፆችን/ቀለሞች ለመማር ይጠቀማል	①	②	③	④
22	ልጁ ዲጂታል መሣሪያዎችን የተለያዩ እውቀቶችን በኦንላይን ለመማር ይጠቀማል	①	②	③	④
23	ልጁ ዲጂታል መሣሪያዎችን ለመጻፍ/ስዕል ለመሳል ይጠቀማል	①	②	③	④
24	ልጁ የቪዲዮ ጨዋታዎችን ለመጫወት ዲጂታል መሣሪያዎችን ይጠቀማል	①	②	③	④
25	ልጁ የህጽናት ፊልም /ተረት ለማየት ዲጂታል መሣሪያዎችን ይጠቀማል	①	②	③	④
26	ልጁ የአዋቂዎች ፕሮግራሞችን (ምሳሊ. ዜና፣ ስፖርት) ለማየት ዲጂታል መሣሪያዎችን ይጠቀማል	①	②	③	④
27	ልጁ ዲጂታል መሣሪያዎችን ፊደላት፣ ቃላት፣ ቁንቁ ለመማር ይጠቀማል	①	②	③	④
28	ልጁ በዲጂታል መሣሪያዎችን ያገኘውን በዘፈቀደ ያያል (ሙዚቃ፣ Game, ማስታወቂያ፣ ፎቶ ወዘተ--)	①	②	③	④