SCIENTIFIC CULTURE
www.sci-cult.com

SCIENTIFIC CULTURE, Vol. 12, No. 2.1, (2026), pp. 10623-10638
Open Access. Online & Print

DOI: 10.5281/zenodo.20067826

THE IMPACT OF SCREEN TIME ON CHILDREN'S LANGUAGE DEVELOPMENT: PERSPECTIVES OF PRE-SCHOOL PARENTS IN MALE', MALDIVES

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Received: 06/04/2026
Accepted: 29/04/2026

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ABSTRACT

The proliferation of digital media has sparked global concern regarding its developmental impact on early childhood. While extensive literature exists on Western populations, empirical evidence from the Maldivian context remains scarce. This study investigates the relationship between screen time and language development among preschool children in Malé, focusing on the mediating role of parental involvement. Adopting a quantitative exploratory survey design, the study utilized a sample-to-item ratio method to target a population of 8,848 preschool children. Data were collected from 141 parents via a structured questionnaire distributed through Google Forms. Statistical analysis, including descriptive and inferential tests, was performed using SPSS to examine variables such as screen duration, content type, and parental mediation strategies. Findings indicate that while most participants reported minimal independent screen use (TV, mobile gadgets, and tablets), there was a high prevalence of established household rules and active supervision. Regression analysis reveals that screen time has a significant positive impact on children's language development ($p < .05$) when supported by active parental involvement. Conversely, unsupervised or passive consumption did not yield similar linguistic benefits. This research concludes that screen time is not inherently detrimental but serves as a catalyst for language acquisition when integrated with high-quality, age-appropriate content and proactive parental engagement. These results suggest a shift in pedagogical focus from absolute screen restriction to "digital co-viewing." This study provides a foundation for educators and policymakers in the Maldives to develop evidence-based guidelines for healthy digital habits in early childhood.

KEYWORDS: Screen Time, Language Development, Parental Improvement, Preschool Education, Early Childhood Education, Inclusive Education, Digital Mediation.

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1. INTRODUCTION

In today's rapidly evolving world, children are increasingly spending their time engaging with screens rather than participating in other developmental activities They are exposed to screen-based content in various forms, including watching television, using mobile phones, and playing online games. Parents play a central role in facilitating their children's access to screen media. Therefore, it is essential for parents to understand how screen time may influence different aspects of their child's development.

There has been numerous research has done on screen time impacts on children. Most of the research has shown that screen time negatively affects children's development. This study aims to examine how screen time affects children's language development, specifically from the perspectives of preschool parents in the Male' area of the Maldives.

1.1. Background Of Study

In recent years, the influence of screen time on young children has grown significantly. Screen time is generally defined as exposure to audiovisual media such as television, computers, mobile devices, and video games (Bhutani, et al., 2024). Since the COVID-19 pandemic, children's screen time has notably increased, becoming a major concern for parents and educators. There is growing evidence linking this rise in screen exposure to pandemic-related lockdowns and school closures (Toombs, et al., 2022). Many studies suggests that excessive screen time may negatively impact children in various ways, including reduced social interaction, delayed speech development, and attention difficulties.

The early years are crucial for language acquisition, and excessive screen use can limit valuable face-to-face interactions, which are essential for developing communication skills (Karani, Sher, & Mophosho, 2022). language through imitation and engagement with others, and the absence of real-life conversations may hinder this developmental process. Bhutani et al., (2024 found that increased screen use is associated with decreased parent-child interaction, which can adversely affect children's language development. However, some studies have shown that screen exposure in educational contexts can support language growth by enhancing vocabulary, linguistic diversity, and exposure to new experiences (Karani, Sher, & Mophosho, 2022).

In Male' many children spend their after-school hours at home, often engaging with screens. Some parents tend to rely on screen media to keep children occupied when they are bored or irritable, rather than encouraging participation in educational or life-skill-based activities (Raheem, et al., 2023). According to Dewi etal.,(2023) a relationship between increased screen use and speech delay in young children. Parents may not always be aware that excessive or passive screen exposure during this sensitive developmental stage can have negative consequences. Monteiro, Fernandes, & Rocha (2022) also highlighted that overexposure to screens is linked to behavioral problems, reduced attention spans, and delays in speech development. Raheem, et al., (2023) further emphasized that screen overuse can negatively impact both speech and language development.

Parental involvement plays a vital role in mediating the effects of screen time. Unsupervised or passive screen use can contribute to developmental delays, while active parental engagement during screen time may foster positive outcomes. According to Agarwal, (2024 children benefit more when parents co-view content, discuss it, and guide the learning process. Additionally, setting clear boundaries on screen usage is essential. Excessive screen use has been associated with difficulties in emotional expression, interpreting social cues, and forming relationships (Bahr, 2023). At home, parents can involve their children more in reading storybooks, flashcards, or playing with letter cards to enhance language development skill. Previous research indicates that linguistic activities such as book reading and vocabulary training are associated with improved verbal outcomes for early children (Hagen, 2018).

This study seeks to explore the perspectives of preschool parents in the Malé. The findings aim to inform educators, policymakers, and parents in making evidence-based decisions to support healthy developmental practices in early childhood.

1.2. Problem Statement

With rapid technological advancements, children are increasingly spending their formative years engaging with electronic devices. Rather than interacting with family members or peers, many children are now spending a significant portion of their day on screens. This shift raises concerns about the potential developmental consequences of reduced social interaction, particularly in the area of language acquisition.

According to Muppalla et al. (2023), excessive screen time is associated with a decline in the quality of parent-child interactions, which are essential for language development. Children who experience

limited social engagement may struggle with skills such as sharing, turn-taking, and collaboration—abilities typically developed through interactive play. It was also observed that children who spend extended periods watching screens may become socially withdrawn, leading to limited opportunities for language-rich interactions (Raheem, et al., 2023).

Speech delay is a common developmental concern linked to high screen exposure. Children who have speech delay issues will lead to difficulty in expressing needs and thoughts effectively. The children will not have much opportunity to engage with the peers if they spend half the day playing with the devices (Raheem, et al., 2023). Children in school who have language or speech delays may be more likely to develop learning and literacy problems, such as difficulty reading and writing. Children with such problems may also be at higher risk for behavior and psychosocial adjustment, which may continue into adulthood (Jullien, 2021).

As screen time continues to rise, it is critical to examine whether parents are aware of how much time their children spend on screens and how this might impact their language development (Taddese et al., 2025). Understanding parental perspectives is essential for identifying both risks and opportunities associated with screen use. This study seeks to explore the relationship between screen time and children's language development by focusing on the perceptions of preschool parents in the Male' area. The aim is to better understand how screen time is managed at home and how parental practices may influence language outcomes in early childhood.

1.3. Research Objectives and Questions

The primary objective of this study is to explore the relationship between screen time and children's language development, focusing on the perspectives of preschool parents in the Male' area of the Maldives. **Specifically, the study aims to answer the following research questions:**

(1) What is the extent to which preschool children in the Male' area exposed to screen time daily.
(2) Is there any impact of screen time on children's language development?

1.4. The Significance of the Study

In this digital era, screen time has become an integral part of children's daily routines. As preschoolers increasingly engage with digital devices, understanding the implications of this trend particularly on language development has become crucial. Understanding parents' perspectives on the impact of screen time will offer valuable insights for preschool parents, teachers, and policymakers.

This study can help parents to explore the influence of screentime on their children's language development through the perspectives of preschool parents in the Male' area. The study also aims to raise awareness among parents about the importance of balancing screen-based activities with interpersonal interaction, particularly in the context of language development.

For teachers, the findings of this study can offer a more profound understanding of how screen time impacts students outside the classroom. It may provide opportunities for the teachers to design more targeted activities to support improving language development. They can use this knowledge to make the parents aware about the impacts of screen time during parent-teacher meetings or through conducting awareness programs.

For policymakers, the study highlights the need to develop clear national guidelines on screen time for preschool-aged children. This can assist policymakers in creating guidelines for children's screen time and integrating literacy into the preschool curriculum. Conduct more awareness programs for children about how to use screens and for parents about how to monitor, control, and balance their children's screen time. These steps will help to encourage children to use screen time in a healthy way, and parents are more responsible for monitoring their children during screen time.

2. LITERATURE REVIEW

The usage of screen time among children has increased, and it's one of the significant topics that has been debated regarding how it impacts early childhood development, especially children's language development. Numerous studies have explored the impact of screen time on children's language development (Nalliah et al., 2025). Most of the studies found that the positive and negative effects determine the quality of content that a child uses and the interaction between parents during screen time.

This literature review will include different scholars' definitions of screen time and language development, an overview of the conceptual framework, a synthesis of previous literature, identification of the literature gap, and a summary. The review begins by defining the key concepts of screen time and language development, followed by an overview of relevant theoretical frameworks.

2.1. Screentime

Screentime is defined differently across the

literature, but it broadly refers to the amount of time spent using devices with screens, such as televisions, computers, smartphones, tablets, and gaming consoles. According to Al Hosani et al. (2023), screen time refers to the time spent on devices such as computers, televisions, iPads, and mobile devices. Bhutani et al., (2024) Screen time is described as the exposure to audiovisual media via numerous devices, such as smartphones, televisions, computers, or gaming consoles. According to Karani et al. (2022), screen time can be referred to as active or passive. It is based on how the child interacts with the screen.

2.2. Language Development

Language development is one of the crucial skills that children acquire the ability to understand and use language for communication. It includes a range of skills such as listening, speaking, vocabulary building, and sentence formation. According to Madigan et al. (2020), language development is the process of how children learn to understand language and how they express their feelings to communicate with others, and it is shaped by the influence of environmental factors around them. Language development is an important component of the developmental skills of early childhood. It is affected by different factors, like learning activities, screen time, and sleep quality (Kaewpradit et al., 2025).

According to Foushee, Srinivasan, and Xu (2023), language development is observed as an active, self-directed process where children can actively involve themselves in choosing their learning materials rather than being passive recipients of guidance from other people. Language is a set of traditional spoken, manual (signed), or written symbols through which humans express themselves as members of a social group and participants in its culture (Crystal & Robins, 2025).

Based on the collective definitions, screen time can be defined as any activity that the child is exposed to with the screen; it might be watching TV, playing games, or taking part in a learning activity using any digital tools. On the other hand, language development refers to the child's capacity to understand and communicate in their native language.

2.3. Conceptual Framework

This study is exploring how screen time impacts children's language development from the perspectives of parents of the greater Male' area. In this frame work, Screen time is an independent variable and dependent variable is language development. This research is guided by Vygotsky's social interactionist theory, Bronfenbrenner's Ecological Systems, Cognitive Load Theory and AAP screen time guidelines.

Vygotsky's social interactionist theory emphasizes the role of social interaction in the development of children's language (Alharbi, 2023). Bronfenbrenner's Ecological Systems posits that the development of children is influenced by various environmental systems (Sundqvist et al., 2023). Screen time, as part of the microsystem, is a daily activity that influences language development in children. Its effects depend on the quality of the content (educational or non-educational) and the parent-child interaction during screen time. Cognitive Load Theory suggests that exposing children to excessive screen time affects their language learning development, especially when children engage in fast or complicated content. This exposure makes it too difficult for children to understand or remember new words (Cios et al., 2023). According to the American Academy of Child & Adolescent Psychiatry (2024), children should be involved in screen under the guidance of a parent and it should be limited based on the child's age. The AAP also recommended to the parents that during screen time, children should engage in educational content and interact with their children. It enhances children's language development skills.

The conceptual framework in Figure 1 shows that excessive screen time may impact children's language development negatively by reducing social interaction and face-to-face conversation with the people around the child.

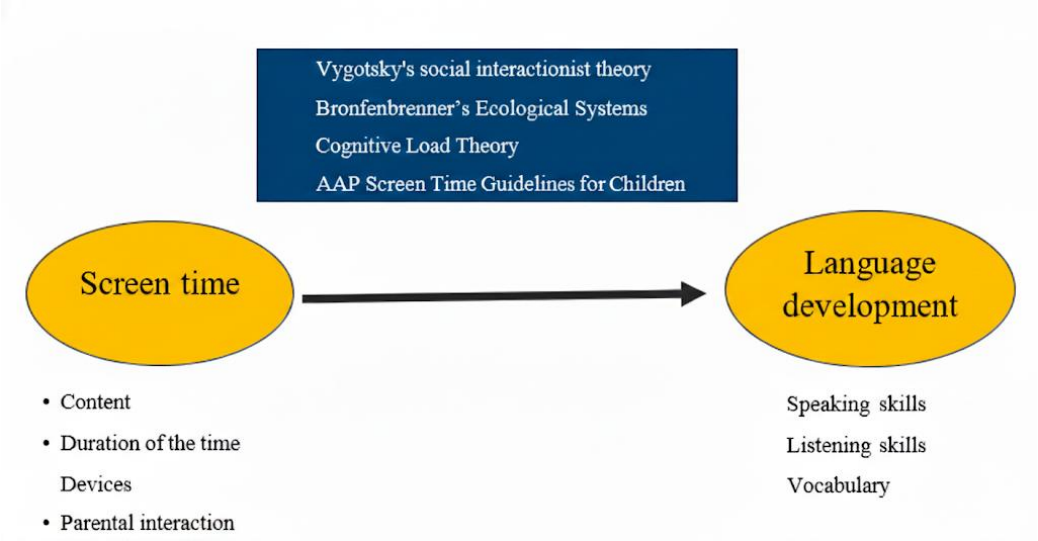


Figure 1: Conceptual Framework.

2.4. Synthesis Of Literature

The impact of screen time may be positive or negative. It depends on the child's screen content and parental involvement. During the screen time, it is also required for parents to monitor and observe their children closely to help them grow in developmental domains such as cognitive, physical, social, emotional, and language (Panjeti-Madan & Ranganathan, 2023).

According to Karani et al. (2022), children's language skills can be developed by sharing screen time with their parents, like watching TV and playing games together. Spending on interactive activities and educational screen content may help children develop language skills, whereas children who spend time on the screen passively may have a negative impact on language and social skills. (Bal et al., 2024). Research also indicates that in early ages of onset, viewing negatively affects language development; on the other hand, older ages of viewing show some benefits for language development (Karani et al., 2022).

The literature reveals that excessive screen time has a negative impact on children's language development. Some studies show children younger than 2 years and those aged 3–4 spend more time watching TV (Fatin et al., 2021). A large-scale survey found out that toddlers who spent one hour or more than an hour with a mobile device have poorer language development (Rayce et al., 2024). Takahashi et al. (2023) mentioned that children's screen usage was linked to a higher risk of developmental delay in communication by the age of two years. A UAE case-control study found 90.3% of children who showed language developmental delay use electronic devices (Al Hosani et al., 2023).

A study based on finding parents' knowledge, attitudes and practices regarding children's screen time at home revealed that parents have positive attitudes towards managing screen time (Fatin et al., 2021). However, their understanding of the health effects associated with screen time is limited, as they scored below 50 (Fatin et al., 2021).

Excessive screen time is not only affecting children's language development, but it has also been linked to children's health problems, such as hypertension and heart problems. It also affects time spent with family members and causes social and thinking problems, as well as emotional and behavioral problems. Children who spend more time on screens have a higher chance of not getting enough sleep because of late bedtimes (Fatin et al., 2021). Children who spend more time on screens also have difficulty understanding individual emotions and interacting with others, like playing games (Raheem et al., 2023). Raheem et al. (2023) also mentioned that young children spend too much time with gadgets; their parents should be more careful because it might be a sign of attention deficit and hyperactivity.

Panjeti-Madan and Ranganathan (2023) recommend some activities for parents to participate in with their children rather than letting them spend more time on screen. Activities like reading aloud, having conversations, playing games, using descriptive language and singing songs help them learn new vocabulary and develop their language skills.

Some of the recommendations for families include: children younger than 2 years should not be exposed to digital media, encourage co-viewing with

their children, turn off any digital media tools if they are not used; always supervise and monitor the media content and turn on the "disturb" option when playing and having meal and sleep times to avoid distractions. Panjeti-Madan & Ranganathan (2023).

Various studies have found that screen time can both positively and negatively impact children's language development. It depends on the factors that the child is exposed to during screen time. If the child has a chance to interact with more educational games, discussing the content with the adult and managing screen time may have positive impacts on language development. In contrast, if the child spends time on a screen without monitoring or interacting, watching content may harm child language development. For instance, it is important for the parents to monitor and guide their children to establish healthy screen time habits.

There is various research that has been done on examining the impacts of screen time on language development, behaviors and other health problems. However, there is little research that has been done on understanding the perspectives of parents of preschoolers regarding their beliefs about the impacts of screens on their children's language development. Many studies have been conducted in a systematic review. Those studies are done based on information that they have collected before or summarizing the previous research but not exploring the parents' perspectives about the screen time and language development. Moreover, most of the studies are based on western countries and not the Maldives. But for those few studies, this one would be a valuable addition. This study focuses on parents' perspectives of the impacts of screen time on children's language development.

3. METHODOLOGY

This study used a quantitative method to understand the impacts of screen time on children's language development, based on the perspectives of preschool parents in the Male 'area of the Maldives. An exploratory survey designed used to collect numerical data to understand the association of screen time and language development.

3.1. Population And Sample

The target population of this study includes 8848 parents of preschool students from the Male' area Maldives. According to school statistics from 2021 to 2022, the total number of preschoolers in Male city was 8848 (School Statistics 2021/2022) To draw accurate conclusions from research results, it is important to choose the right sample size.

There are different sample methods that used to determine the appropriate sample size such as Krejcie Morgan's table, Sample-to-variable ratio and Raosoft sample size calculator. For this study used the sample- to-item ratio method to determine the appropriate sample size. This method is normally used in exploratory factor analysis. According to Gorsuch (1983), Hatcher (1994) and Suhr (2006), as cited in Memon et al. 2020, this method was recommended. The questionnaire consists of 27 items and a minimum of 135 participants was targeted in this research.

A simple random sampling technique was used to select participants from the population of preschool parents from the Greater Male' area. This method has each parent having an equal chance of being selected to ensure the reliability of the result. Parents were chosen randomly from different preschools in the Male' area. A total of 141 parents participated in the survey.

3.2. Instrumentation, Validity And Reliability

Instrument can be defined as a tools or device that collect data. In the research process, it is an important step to choose a right tool for the research (Sathiyaseelan, 2015). In this research, this questionnaire "screen time and language development" is used to collect data. This instrument has sections A and B. Section A included demographics, and selection B included questions based on two variables. 8 questions were included in "screen time habit", and 10 questions were included on language development. The questionnaires were chosen from Varghese & Karuppali (2024) and Kaur et al. (2021). The questionnaires have been used in previous studies, which supports their validity and reliability. Moreover, pilot data were collected for analysis and to assure validity as well as internal consistency by Cronbach's alpha. The data were collected by using Google forms from 3rd April to 10th May 2025.

The questionnaire uses taken from (Varghese & Karuppali, 2024) (Kaur et al., 2021) and (joy, n.d.) and it has been used in previous researches such as "Parental perspectives on the impact of screen time on the language skills of typically developing Indian children" and "Development and evaluation of the digital screen exposure questionnaire (DSEQ) for young children". Therefore, the reliability and validity of the questionnaire is acceptable.

3.3. Data Collection And Analysis

Once the questionnaire was approved by the

ethics committee of MI College, the Google Form was created, and all the items in the Google Form were made compulsory to fill, and they were sent to the participants who were selected through sampling techniques across the population.

The data analysis was done by using the software SPSS (Statistical package for the Social Science). Data were collected using google form and then transferred into google sheet. The Google Sheet was created and coded in such a way it can be imported into SPSS. At the beginning, the descriptive analysis was analyzed, and later the inferential analysis was done by using SPSS v.26.

3.4. Ethics Approval

This study followed the ethical rules. The ethics was approved initially by the MI college ethics committee. Before collecting data from the parents, I have taken permission from the preschools in the Male area. After the questionnaire form was sent to the schools, the schools sent questionnaires to the parents. The participants of this study are voluntary. They were informed that they could withdraw from the study at any time without any consequences. Parents were informed their responses would remain confidential and will use for academic purpose only.

4. FINDINGS AND ANALYSIS

4.1. Demographic Variables

The demographic data shows that 100% of the participants were from the Maldives. The majority of the study participants were female (80.1%) and aged between 25 and 34 (57.4%). The most participants included in this study were full-time parents (63.8%), while stay-at-home parents were (30.5%).

In this study (34.8%) participants had completed high school or below, (24.1%) had diplomas and (22.7%) were holding bachelor's degrees. The ages of the children range between 2 and 7 years old, and the highest representation is 29.1%, which are from both the 3 to 4 years and 4 to 5 years age groups.

The study found that 37.6% of children spend time on a screen between 1 to 2 hours a day. Children primarily engage with the English language app or cartoons. The study found that 73% of parents perceived screen time as having both educational benefits and potential harm to speech development. 5.7% of parents believed that screen time negatively impacts language development. This background information is useful for understanding the parents' perspectives on screen time and language development in this study.

Table 1: Demographic Variables.

Variable	Category	Frequency(n)	Percentage (%)
Gender	Female	113	80.10%
	Male	28	19.90%
Nationality	Maldivian	141	100%
Parent/Guardian Age	Under 25years	10	7.10%
	25-34 years	81	57.40%
	35-44years	47	33.30%
	44 and above	3	2.10%
Employment status	Full-time	90	63.80%
	Part-time	5	3.50%
	Stay-at-home parent	43	30.50%
Educational Background	High school or below	49	34.80%
	Diploma	34	24.10%
	Bachelor's degree	32	22.70%
	Master's degree	26	18.40%
Child Age	2-3years	35	24.80%
	3-4years	41	29.10%
	4-5years	41	29.10%
	5-6years	7	5.00%
	6-7years	17	12.10%
Daily Screen time	Less than 1 hour	31	22.00%
	1-2hours	53	37.60%
	2-3hours	32	22.70%
	More than 3 hours	25	17.70%
Language used During Screen time	Dhivehi	48	34.00%
	English	93	66.00%
Parent Perception of Screen time	Educational benefits	30	21.30%
	Potential harm to speech development	8	5.70%
	Both	103	73%

Table 1 shows information regarding the relationship between parents' employment status, children's daily screen time and the age group of children. It shows how many hours children spend on screen and their parents' employment status. The ages of the children were between 2 and 7 years old, and the hours of screen time are divided into 4 categories: they are less than 1 hour, 1 to 2 hours, 2 to 3 hours, and more than 3 hours. This table provides useful information on how screen time changes based on parent employment status and the child's age.

Out of 141 children, 90 children are full-time working parents' children. From the 90 children, 33 children spent time on screens for 1 to 2 hours daily. 22 children spent 2 to 3 hours and 16 children spent more than 3 hours on screen. The data shows the most children with full-time working parents children spend on screen for 1 to 2 hours, and 19 children spend less than 1 hour. Only 5 children out of 141 were from families with part-time working parents. 1 child from 4 to 5 years used screens for 1 to 2 hours and 1 child spent on screen for 2 to 3 hours. Less than 1 hour was spent on screen for 2 children from this category, which are 3 to 4 years and 6 to 7 years old.

From the table represents a total of 43 children were from stay-at-home parents. In this group the highest children who spent time on screens used 1 to 2 hours, which was 18 children. 9 children used screens for less than 1 hour and 8 children used for more than 1 hour. There are only 3 participants in this category. From the finding showed 1 child from 4 to 5 years spent 1 to 2 hours, and 1 child used 2 to 3 hours. Less than hours were used with 1 child, which is from 3 to 4 years.

Overall, the finding showed 85 out of 141 children used screens for 1 to 3 hours daily. The highest screen usage was observed among children aged 3 to 4 years and 4 to 5 years. Less than 1 hour spent on screens is 31 children, and more than 3 hours spent is 25 children from the total participants.

4.2. Screentime Usage

Table 2 shows the relationship between parents' employment status, children's daily screen time and the age group of children.

Table 2: Screen Time and Employment Status.

Child Age:								
Employment status:			**2 to 3 years**	**3 to 4 years**	**4 to 5 years**	**5 to 6 years**	**6 to 7 years**	**Total**
Full-time	How many hours does your child spend on screens daily? This includes activities such as watching TV, playing on the phone, or playing games.	1 to 2 hours	8	14	8	0	3	33
		2 to 3 hours	1	4	10	1	6	22
		less than 1 hour	11	3	5	0	0	19
		More than 3 hours	3	6	4	1	2	16
	Total		23	27	27	2	11	90
Part -time	How many hours does your child spend on screens daily? This includes activities such as watching TV, playing on the phone, or playing games.	1 to 2 hours	0	0	1		0	1
		2 to 3 hours	1	0	0		0	1
		less than 1 hour	0	1	0		1	2
		More than 3 hours	0	1	0		0	1
	Total		1	2	1		1	5
Stay-at-home parent	How many hours does your child spend on screens daily? This includes activities such as watching TV, playing on the phone, or playing games.	1 to 2 hours	5	4	7	1	1	18
		2 to 3 hours	2	3	2	0	1	8
		less than 1 hour	3	3	1	0	2	9
		More than 3 hours	0	2	1	4	1	8
	Total		10	12	11	5	5	43
Unemployed	How many hours does your child spend on screens daily? This includes activities such as watching TV, playing on the phone, or playing games.	1 to 2 hours	1		0			1
		2 to 3 hours	0		1			1
		less than 1 hour	0		1			1
	Total		1		2			3

Total	How many hours does your child spend on screens daily? This includes activities such as watching TV, playing on the phone, or playing games.	1 to 2 hours	14	18	16	1	4	53
		2 to 3 hours	4	7	13	1	7	32
		less than 1 hour	14	7	7	0	3	31
		More than 3 hours	3	9	5	5	3	25
	Total		35	41	41	7	17	141

In today's digital world, children spending time on screens has been increasing, and it has become a part of their daily routines. Children use screens for watching videos, playing games, or chatting with others. A previous study shows screen time offers some benefits for children, but it also raises concerns for their development, especially their language. This research question's aim is to understand how much time children spend on screens on a daily basis. Understanding the extent of screen use by children on a daily basis will help to balance screen time and other daily activities.

A total of 141 parents of preschoolers in the Male' area participated in the survey. The findings indicate that screen time usage among children in preschools located in the Male' area is moderate. When comparing the eight survey items, five of them showed disagreement among parents. 34% of parents disagree that their children watch TV, and 13.4% agreed. Which means more children do not watch TV. More parents disagree that their children play video games using devices, which is 66% of participants in the study. The study also found that 55.3% of participants supervised their children during screen time, and 67.4% of participants had rules regarding how their children use screen time.

Overall, the study found that most children do not rely on screens for watching TV or playing games using phones and tablets. Parents have set limits and supervision on their children's screen time (Table 3).

Table 3: Screen Time Usage in Male' Area Preschool.

Item No	Items	Total agreement		Total disagreement		Mean	Std Deviation
		Frequency	%	Frequency	%		
1	Does the child watch television	19	13.4	48	34	2.71	.883
2	How often does your child spend with phones	24	23.3	50	35.5	2.77	.816
3	Does your child play video games on digital media gadgets	8	5.7	93	66	2.04	.981
4	How often does your child spend with playing with tablets	16	5.7	77	54.6	2.21	1.118
5	Does your child depend on these devices as a reward for doing an activity	21	14.8	84	59.5	2.17	1.195
6	Does your child use TV or any other gadgets under supervision	78	55.3	32	22.7	3.52	1.302
7	Do you have any rules regarding when, where, what& how to watch digital screen?	95	67.4	14	9.9	3.98	1.098
8	Does your child use video calling applications to talk to the family/friends	50	35.4	13	26.2	3.10	1.289

4.3. Normality Assumptions

The Normal P-P plots of Regression Standardized Residual (Figure 2) shows that the dots in the model begin at the bottom and end at the top of the right corner. Most of the blue dots are on the diagonal line. The points do not curve away from the diagonal line or scatter randomly in different directions; this

means the assumptions of linearity is met. The regression model fits the data. Therefore, the relationship of screentime and language development is linear. The scatterplot diagram (Figure 3) shows that the points are randomly scattered around the horizontal line; it indicates the data is linear.

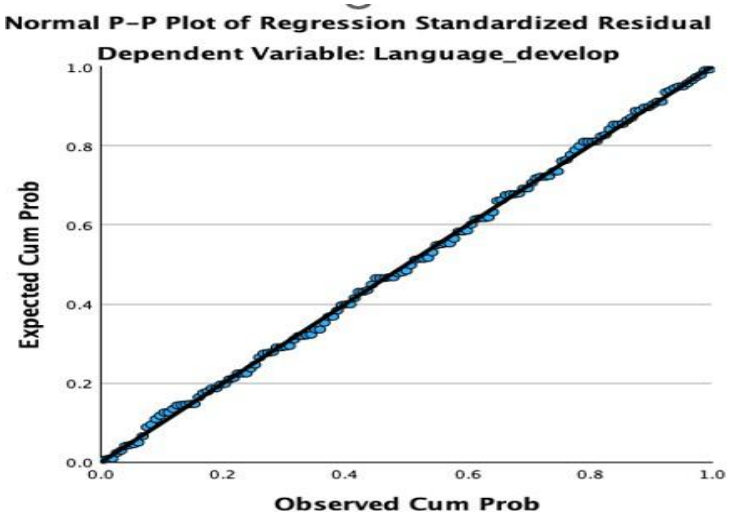


Figure 2: Normal P-P Plot of Regression Standardized Residual.

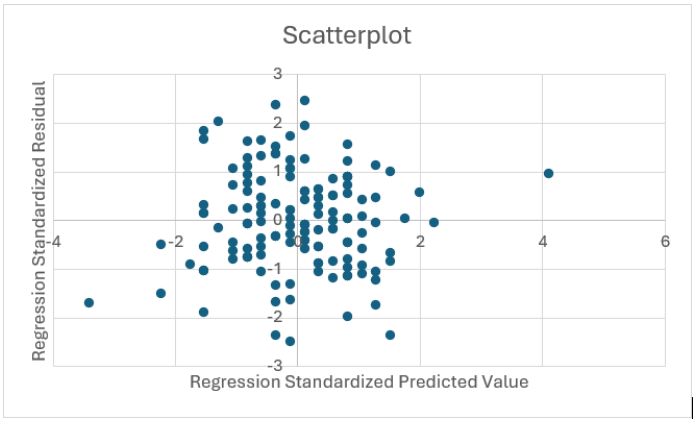


Figure 3: Scatterplot.

The Shapiro–Wilk test is used to check to identify whether the data is normally distributed. Most of the Shapiro-Wilk p-values (Table 4) are greater than 0.05. This means the normality is not violated for most of the screen time and data follows a normal distribution.

Table 4: Test Of Normality.

Tests of Normality[a,c,e,f,g,h]

	Screentime	Kolmogorov-Smirnov[b] Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
Language_develop	1.63	.260	2	.			
	2.00	.164	9	.200*	.942	9	.608
	2.13	.260	2	.			
	2.25	.234	6	.200*	.910	6	.434
	2.38	.155	13	.200*	.917	13	.230
	2.50	.113	12	.200*	.975	12	.958
	2.63	.191	10	.200*	.950	10	.674
	2.75	.133	14	.200*	.951	14	.576
	2.88	.256	14	.014	.847	14	.020
	3.00	.163	12	.200*	.890	12	.117
	3.13	.198	9	.200*	.947	9	.658
	3.25	.145	16	.200*	.954	16	.548
	3.38	.151	6	.200*	.961	6	.830
	3.50	.221	6	.200*	.947	6	.720
	3.63	.238	4	.	.964	4	.804

Furthermore, the histogram of standardized residuals shows symmetric. In the normal P-P plots of regression standardized (Figure 4), most of the dots are on the diagonal lines. The scatterplot displays the points are randomly distributed around the lines without showing a funnel shape or curvature. These reasons indicate that the assumption of homoscedasticity is satisfied.

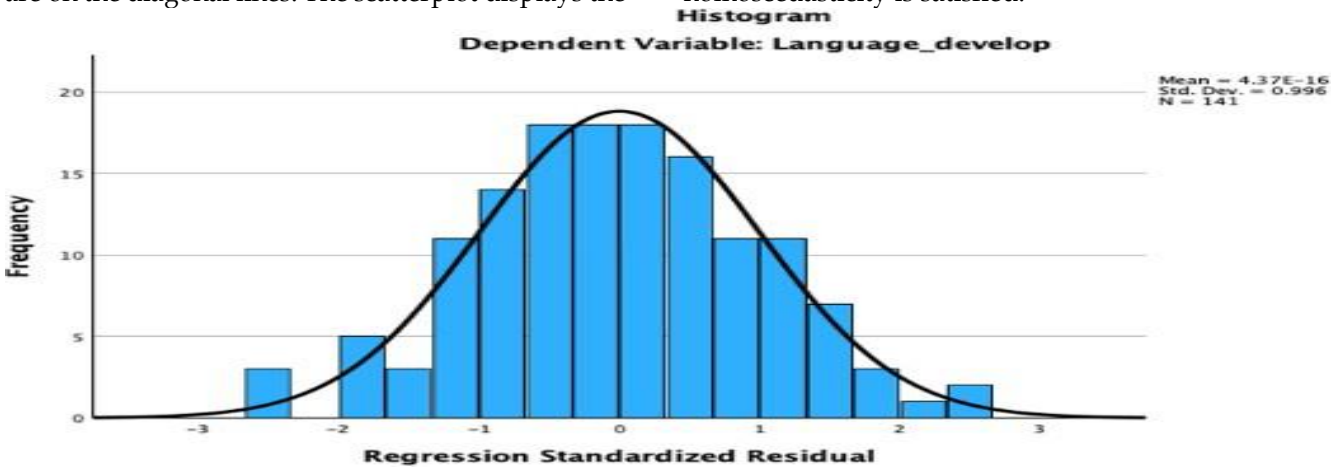


Figure 4: Regression Standardized Residual.

Multicollinearity was checked using VIF (variance inflation factor) and tolerance values. The VIF > 10 some use > 5 indicates high multicollinearity, and tolerance < 0.1 (or < 0.2) indicates high multicollinearity. In this model, the VIF value is below 10 (VIF = 1.00), and the tolerance value is above 0.001 (tolerance = 1.00). The VIF and tolerance value is 1.00. This value indicates there is no multicollinearity, and the multicollinearity is satisfied in this model (Table 5).

Table 5: Multicollinearity Statistics (VIF And Tolerance).

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	1.408	.268		5.246	<.001		
	Screentime	.606	.094	.480	6.459	<.001	1.000	1.000

a. Dependent Variable: Language_develop

4.4. Independence Of Errors

The Durbin-Watson test is used to check for autocorrelation in residuals (errors). If the errors are not independent, then the autocorrelation will occur. The Durbin-Watson value > 2.5 and < 1.5 indicates a problematic. The value close to 2.0 indicates that the residuals are ideal. In this model, the Durbin-Watson value is 2.142, which is close to 2.0. This value means the regression model is valid and the errors are likely independent (Table 6)). Therefore, it suggests that the assumption of error has been satisfied.

Table 6: Durbin-Watson Test for Independent of Errors.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	Change Statistics F Change	Change Statistics df1	Change Statistics df2	Change Statistics Sig. F Change	Durbin-Watson
1	.480[a]	.231	.225	.59234	.231	41.723	1	139	<.001	2.142

a. Predictors: (Constant), Screentime
b. Dependent Variable: Language_develop

Additionally, outliers were checked using standardized residual and Cook's distance. A possible outlier is considered if the standard residual values are greater than or less than 3. Since the standardized residual values range from -2.491 to 2.446. Therefore, there are no extreme outliers. Cook's distance was checked, and it helps to identify influential data points. If the Cook's Distance value is

below 1.0, it is considered acceptable. Table 7 shows the cook's distance values range from 0.000 to 0.158. Average (mean) value is 0.008. Since all the values are below 1.0, it means there are no influential outliers.

Table 7: Residual Statistics.

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.0146	4.4396	3.1121	.32337	141
Std. Predicted Value	-3.394	4.105	.000	1.000	141
Standard Error of Predicted Value	.050	.211	.067	.022	141
Adjusted Predicted Value	2.1142	4.3577	3.1128	.31887	141
Residual	-1.47551	1.44871	.00000	.59022	141
Std. Residual	-2.491	2.446	.000	.996	141
Stud. Residual	-2.500	2.455	-.001	1.004	141
Deleted Residual	-1.48619	1.45921	-.00071	.59970	141
Stud. Deleted Residual	-2.549	2.501	-.001	1.011	141
Mahal. Distance	.013	16.853	.993	1.907	141
Cook's Distance	.000	.158	.008	.018	141
Centered Leverage Value	.000	.120	.007	.014	141

a. Dependent Variable: Language_develop

4.5. Impacts Of Screen Time on Children's Language Development

Nowadays, children spend a lot of time on screens watching movies and playing games using tablets and phones. In this digital era, it is important to understand how these digital tools affect children's language development, whether they affect it positively or negatively. This research question investigates the impact of screen time on children's language development from the perspectives of preschool parents in the Male' area of Maldives. The research question aims to explore how screen time can benefit children's language development when supported by their parents.

Table 8 shows that there is a positive correlation between screen time and language development as the R value is 0.48. The model is fit because the p-value is less than 0.001. This represents the model is statistically significant on language development.

Table 8: Model Summary.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Selection Criteria			Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	Akaike Information Criterion	Amemiya Prediction Criterion	Mallows' Prediction Criterion	Schwarz Bayesian Criterion	
1	.480[a]	.231	.225	.59234	.231	41.723	1	139	<.001	-145.691	.791	2.000	-139.794	2.142

a. Predictors: (Constant), Screentime

b. Dependent Variable: Language_develop

The ANOVA (Analysis of Variance) table also shows that screen time has a significant effect on language development, as the P-value is 0.001 (Table 9). It also indicated that the sample size is a good representation of the population. However, the residual sum of the squares (48.770) represents other

factors which not included this model also have a chance to influence the development of language skills, such as parental interaction, the educational background of the parents, or social interaction.

Table 9: Anova Model.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.639	1	14.639	41.723	<.001[b]
	Residual	48.770	139	.351		
	Total	63.410	140			

The regression coefficient table analysis shows that the model is fit. Screen time predicted a positive and a significant impact on language development as B = 0.606, p < .001. It shows language developmental scores will increase by 0.606 units when the screen time increases by one unit. The Collinearity Statistics: T = 1.00 and VIF = 1.000. It shows there are no multicollinearity issues and also confirmed a 95% confidence interval for B value, as the value is between 0.421 and 0.792. It shows the result is trustworthy.

The regression analysis shows the impact of screentime on language development in the children of preschool in the Male area, Maldives. The three models (model summary, ANOVA, and coefficient model) have demonstrated that screen time has a strong and statistically significant impact on children's language development, as all the models confirmed a significance level of less than 0.001. However, the residual sum of the squares (48.770) represents other factors which not included this model also have a chance to influence the development of language skills, such as parental interaction, the educational background of the parents, or social interaction.

5. DISCUSSION

This study examined the impact of screen time on the language development of preschool children in the Male' area, focusing on the perspectives of their parents. The regression analysis revealed a positive correlation between screen time and children's language development, indicating that screen exposure when managed appropriately can support language acquisition. These findings are consistent with previous literature that suggests screen time can influence language outcomes.

The finding indicates there are other factors that influence the development of language skills, such as parental interaction, the educational backgrounds of the parents and social interaction. Some studies reveal that children use screens moderately and an interactive way will help develop vocabulary acquisition. According to Karani et al. (2022), children's language skills can be developed by sharing screen time with their parents, like watching TV and playing games together.

Some study found that screens significantly impact language development, which can be either positive or negative. The impact depends on how the child uses screen time. According to Bal et al. (2024), children who spend time on the screen passively may have a negative impact on language and social skills. However, Alroqi et al., (2023) concluded that the effects of screen time on language development depend significantly on the amount of time spent, the type of content, and the level of parent-child interaction during screen use. This study also supports Bal et al. (2024). Their study also revealed exposing children to passive screens may risk hindering their language growth, whereas interactive or active screen time can expand children's vocabulary skills and language development.

The data also showed that children across various age groups particularly children between 1 to 2 years of age, spend some time daily on screens. Specifically, 35 children in this age group used screens regularly and 17 children aged 6 to 7 also engaged in screen use. According to Karani et al., (2022) early screen exposure (especially before age 2) may be associated with negative effects such as speech delay. Therefore, it is important to limit screen exposure in the early years, while promoting high-quality, age-appropriate content as children grow older.

This study also revealed that parents in the Male' area demonstrate positive practices regarding screen time. From the finding, 55.3% of parents supervised their children while they were on their screens, and 67.4% of parents set rules for screen time based on when and what they watched during the screen time. This study supports previous research done based on finding parents' knowledge, attitudes and practices regarding children's screen time at home (Fatin et al., 2021). They also showed positive attitudes towards managing screen time.

5.1. Recommendations

This study indicates that there is a positive relationship between screen time and language development. Therefore, this study recommends that

preschool Parents are encouraged to actively participate in their children's screen time by discussing content, asking questions, and relating screen-based experiences to real- life situations. This type of engagement can enhance children's vocabulary acquisition and communication skills. It also indicates that parents should establish clear rules regarding screen usage, including daily time limits and content guidelines. This will help prevent overexposure and ensure that screen use supports, rather than hinders, language development.

Teachers in the Maldives are encouraged to integrate high-quality digital content into classroom instruction to support language learning. Teachers can also guide parents by offering practical strategies to make screen time more educational at home. Teachers, Schools and early childhood institutions are encouraged to organize workshops and parent-teacher meetings focused on the impact of screen time and the importance of parent child interaction about screen time (Nalliah et al., 2025).

The Ministry of and relevant authorities should establish national guidelines on screen time for young children, aligned with international standards. These policies should include recommendations for content quality, screen duration, and the role of adult supervision. This study revealed that screen time supports children's language development. Therefore, the Ministry of Education can support schools by providing tablets or computer labs for preschool children in the Maldives. In addition, they are encouraged to provide awareness and training programs to teachers and parents about how screen time can be a beneficial learning experience for children.

5.2. Implications

Based on the findings, the study will help parents better understand how screen time affects their children's language development. It helps them to understand the benefit of balancing screen time and supervising children. Parents can be more aware of the importance of providing opportunities for the children to be exposed to high-quality educational content like videos and apps. This study encourages parents to interact with their children during screen time by talking and discussing the content together, which helps create a language-learning environment at home.

This study will benefit preschoolers and educators by integrating digital tools into the classroom. By introducing educational apps and videos, storytelling platforms can help get students' attention for the lesson. Schools could understand the benefits of training teachers how to use technology, like interactive whiteboards, the Book Creator app and vocabulary games during the classroom to enhance children's language development.

This study supports integrating ICT in early childhood education. The Ministry of Education could consider introducing an ICT module for preschoolers involving age-related activities in their language development. It supports providing tablets or opening a child-friendly lab for preschoolers. For policy makers, they can help to prepare guidelines for balancing screen time in an early year. It helps children use screens in a healthy way without negatively impacting their language development.

5.3. Future Studies

Future research should focus on the long-term impact of screen time on children's language development in Maldives. However, this study shows that there is a positive relationship between screen time and language development, making it important to understand how these effects manifest as children grow older. In the context of the Maldives, such research would be important in guiding parents, teachers, and policymakers to support children's use of screens in a balanced way to enhance language development.

6. CONCLUSION

This study examined the impact of screen time on the language development of preschool children in the Male' area, from the perspective of parents. The results acquired from this study indicated that when used appropriately especially with parental supervision and high-quality content screen time can have a positive impact on early language development.

However, the study also revealed the importance of balance. That screens alone do not improve language development; other factors, such as content quality, parent involvement, and the duration of exposure, also play a significant role in enhancing children's language development. Based on the findings, it is important for parents to balance their children's screens and expose them to fun and educational content while supervising them. This research will also benefit educators and policymakers by implementing awareness programs for children and parents.

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