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Relationship between Screen Time and Children's Language Development: A Systematic Literature Review

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ABSTRACT

This study analyzes the complicated relationship between children' screen time and language development, to identify patterns and implications in the results of existing research. The definition of "screen time" includes both active and passive use of digital gadgets. There are worries about possible detrimental effects on children's language development, with a focus on the decreased frequency of contact with others that are caused by excessive use of devices. The important role of the social context for the development of speech is highlighted, recognizing the growing influence of technology in both active and passive forms. A systematic review methodology is used, following protocols tailored for educational research, to synthesize findings from various studies. Diverse points of view on screen time and language development are offered by some previous researchers. The findings revealed several themes, such as the close relationship between excessive screen time and language delays, the consequences of different screen durations, and the complex ways in which smart screens affect phonological memory. In order to balance screen time and support children's healthy language development, the conclusion emphasizes the need for more research on screen content and calls for future studies on intervention techniques and educational initiatives. These findings will be helpful to educators, parents and policymakers.

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INTRODUCTION

The research of Ponti et al. (2017), "screen time" is the amount of time spent on any screen, including those on phones, tablets, laptops, computers, video games, and televisions. Moreover, according to Sweetser et al. (2012), "screen time" can refer to both passive and active screen time. Additionally, they contended that "active screen time" refers to a child's capacity to take

part in digital activities both cognitively and physically (Sweetser et al. 2012). The use of gadgets has been connected to problems with language development along with consequences like screen time and speech delay. Children who utilize screens more often have less parent-child interaction, which may be harmful to their development, as stated by Bhutani et al. (2023). Developmental data indicate that because of their addiction with smart technology, children today spend less time playing and relating with their peers. Children under the age of two typically struggle to understand what they are reading and are not able to apply what they are learning from digital media. Therefore, face-to-face interactions with family members or other adults who are caring for them benefit children's language development and learning (Canadian Pediatric Society, 2017).

The social context where a child is raised has a direct impact on the genesis and development of speech (Piaget, 1954; Vygotsky, 1978). Early exposure to active adult interaction fosters the development of speech, requiring both direct and indirect communication in order to acquire the proper linguistic phrasing. The parent is the traditional agent and motivator for speech development, and the qualities of the relationship between the child and the parent are closely linked to traits of the children's overall development as well as the development of speech in particular. At present, technology is utilized both actively through smart screen technology and passively through television viewing by kids, primarily relying on how their parents feel about smart tech. In today's scientific community, this is a very urgent problem because there are situations where children's consumption of smart devices takes the place of real conversations with parents and classmates. The children's mental health and personality development could be negatively impacted as a consequence (Clarke and Kurtz-Costes, 1997). Different parental beliefs, among those that could draw attention next, may influence how children utilize technological gadgets. Some parents worry that their children may start to fall behind their friends as a result of their use of smart electronic devices, and there are strong supporters regarding this (Martens et al. 2018). Modern technology is also important for preschoolers to use in order to enhance and improve learning (Eisen and Lillard, 2017). The idea that there are more advantages to children's smart device use than negatives is linked to parents' own excitement and confidence in utilizing gadgets (Mascheroni et al. 2016). Because of their popularity, ergonomic design, attractive appearance, and varied sensory stimulation, tablets are typically preferred by kids over other electronic gadgets. This is especially true for preschool-aged kids. Children are also generally engaging with different programs or viewing videos.

Research Question

1) How do the findings from various studies agree or differ in explaining the relationship between screen time and children's language development?

LITERATURE REVIEW

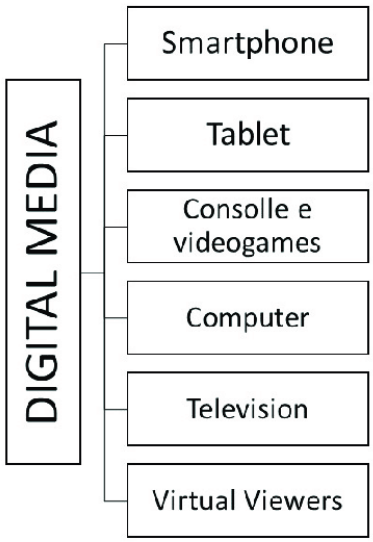
Screen time

Different people have different ideas about screen time, and that new research is always changing our knowledge of its effects. Many experts emphasize the importance of utilizing digital devices in an environmentally conscious and suitable age manner. Researchers studying the effects of screen time on people's physical and mental health, social interactions, and cognitive development belong to a variety of disciplines, including psychology, sociology,

education, and public health. These specialists use an integrated technique to figure out the complex relationship between using screens and various effects.

Several media categories now in use are displayed in Figure 1. Children have early access to tablets, smartphones, and televisions at home. Children of every age are able to acquire new skills through interactive television shows and movies that are used as teaching aids in schools and at home. Social media sites like Facebook, Instagram, and TikTok are used by children for interacting with their peers. Teens and tweens frequently use social media. Video games and other gaming materials are available to children at home, and they enjoy playing them despite their age.

Figure. 1 *Conceptual map demonstrating the primary categories of digital media (Navarra et al. 2021.)*



According to a study by Alper (2014), the term "screen time" became popular in the 2000s and is used to characterize—often negatively—the overall amount of time children spends spending time with media via screen-based digital technologies. The previously mentioned screen time recommendations are supported by research, which consistently shows a correlation between early children's screen time and language delay (Duch et al. 2013; Zimmerman et al. 2007).

Furthermore, American Academy of Pediatrics (AAP): The AAP studies the effects of media on child development and offers recommendations for kids' and teens' screen use (2020). Children and teenagers view displays regularly, including computers, gaming consoles, tablets, mobile phones, and Televisions. In the United States, children between the ages of eight and twelve old watch or use screens for four to six hours a day on average, while teens can use them for up to nine hours. While screens can provide children with entertainment, education, and distraction, overuse of them may have negative consequences. Families must develop a well-thought-out screen-time strategy because of the complicated environment involved in regulating a child's screen usage. Guidelines designed for various age groups underline this importance. Children under the age of eighteen months should only use screens for video chats with adults, and children around eighteen to twenty-four months should watch informative television with a

caregiver. Children between the ages of two and five are advised to spend no more than an hour during the week and three hours on the weekends on non-educational screens. For children six years old and up, it is critical for parents to promote healthy habits and set limits on screen-based activities. Montanari (2017) reported that children still watch television for much of their screen time. On the other hand, younger and older people are using computers and playing video games, and having devices like tablets and smartphones. More specifically, watching television has been inconsistent with the development of physical and cognitive abilities and positively related with obesity, sleep problems, depression, and fear. The physiological mechanisms behind the negative effects of screen time on health are still unclear as is the relative contribution of different media and screen content categories to specific health outcomes. This review discusses both the beneficial and detrimental impacts of screen time on children's mental and physical growth. Parents and clinicians are provided with recommendations.

Positive and healthy screen use is achievable with the right direction and consistency, which is the most crucial lesson.

Children's Language Development

The main points of contention centered on the theory's incapacity to explain why children possess far more linguistic knowledge than they could have learned because they reconstruct the fundamental grammar rules rather than just repeating what they hear (Chomsky, 1972). Chomsky popularized the idea that children naturally acquire in language through an innate ability in the human brain known as the Language Acquisition Device (LAD). He emphasized the significance of natural language systems. Chomsky's theory explained a significant shift in the understanding of language acquisition, challenging behaviorist perspectives that emphasized external stimuli and reinforcement. However, it is important to note that while Chomsky's theories have greatly influenced the field, they are not without controversy, and alternative theories continue to contribute to our understanding of language development.

Suwartono (2011) argued that it is reasonable for an individual to acquire two or more first languages simultaneously during the process of language acquisition. A human child's language development is a continuous process rather than being separate or distinct. Bruner's theory about a language acquisition support system is presented by Cole and Cole (1996), who explain how parental behaviors influence children's linguistic environment and facilitate language development. This concept aligns with alternative viewpoints. Children immediately begin to learn language after birth. They may pick up knowledge from nothing and learn what language does and does not represent (Clark, 2002). Children then have multiple opportunities to speak the new language and be understood because of their linguistic environment.

Figure. 2 *Piaget's Stages of Cognitive Development*

Stage	Age range	What happens at this stage?
Sensorimotor	0-2 years old	Coordination of senses with motor responses, sensory curiosity about the world. Language used for demands and cataloguing. Object permanence is developed.
Preoperational	2-7 years old	Symbolic thinking, use of proper syntax and grammar to express concepts. Imagination and intuition are strong, but complex abstract thoughts are still difficult. Conservation is developed.
Concrete Operational	7-11 years old	Concepts attached to concrete situations. Time, space, and quantity are understood and can be applied, but not as independent concepts.
Formal Operational	11 years old and older	Theoretical, hypothetical, and counterfactual thinking. Abstract logic and reasoning. Strategy and planning become possible. Concepts learned in one context can be applied to another.

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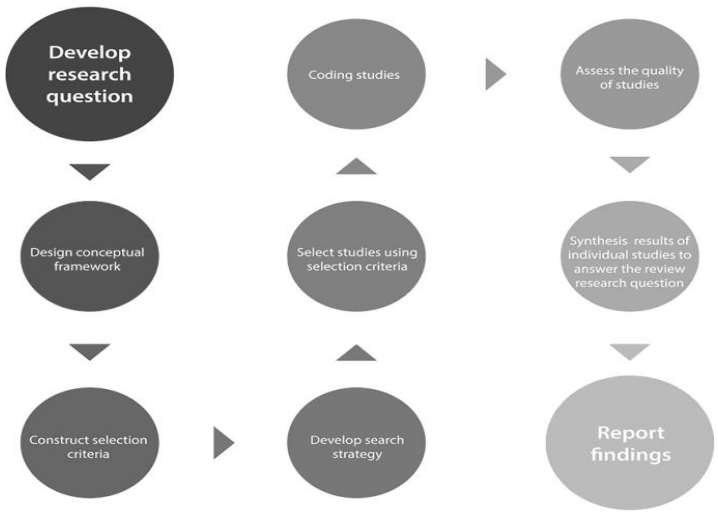
Piaget's theory of cognitive development, a child's language development and cognitive growth are closely related. He stated that children's language develops in step with the complicated nature of their ways of thinking.

RESEARCH METHOD

A systematic review is a form of research approach that includes data collection and analysis in addition to locating and evaluating pertinent research (Liberati et al. 2009). When used in reference to research methodology, critical review is the process of objectively evaluating and deriving logical conclusions from publications, research findings, or other literature. It attempts to weigh the advantages and disadvantages of the study while evaluating the quality, effectiveness, and validity of past research. This study used an approach that synthesizes data from original research to conduct a systematic review in order to address the research challenges previously discussed. The researchers used a comprehensive and scientific methodology designed specifically for the study of education, carefully adhering to the rules and techniques outlined in the Newman and Gough (2020) systematic review.

Figure. 3 *The steps of the research methodology as outlined by Newman and Gough (2020)*



Developing Research Question

The concept was inspired by the relationship found between screen time and kids' speech and language development, as well as the degree to which screen time influences kids' language development. To offer a thorough examination, we have expanded the subject matter to include additional elements including the goal, focus, conclusions, organization, and methods used in the research that were considered crucial for this systematic review.

Designing Conceptual Framework

Screen time is a factor in how youngsters acquire their language, according to the conceptual framework. Extensive regional and global study on technological media and screen time led to the development of our conceptual framework. We subsequently focused our attention to the connection between screen time and language acquisition. We thoroughly examine the collection of research on screen time and young children's language development in order to offer a theoretical framework.

Constructing Selection Criteria

The criteria for being included and excluded were established ahead of developing the search method, referring to the principles of the Newman and Gough (2020) systematic review.

Developing a search strategy

For ensuring accuracy and credibility, we conducted tests utilizing multiple search strategies. A comprehensive search strategy addressing each potential aspect of children language development complete with appropriate keywords and controlled vocabulary. To guarantee comprehensive coverage, a large variety of scholarly databases, pertinent periodicals, and literature sources are chosen. As a result, we just used the basic phrases in particular databases. Using electronic databases including research gate, semantic scholar, ELICIT, and google scholar, we looked for the incorporation of screen time in affecting the children’s language development.

Selecting studies using selection criteria

The aim of implementing the criteria with focus was to enhance the selection process and ensure only research that complied with the previously established standards was selected for consideration. This methodology refers to accepted methodological criteria and enhances the relevance and a consistency of the systematic review. A thorough review of electronic databases found in an entire list of 29 studies that investigated screen time and language development. These studies have been identified by their detailed and based on research method. The researchers then systematically narrowed the number of alternatives to 18 publications. Following an in-depth investigation, the focus was reduced to a particular group of ten articles. The focus of these selected papers was on the connection between children' use of screens and language development. This methodical approach ensures that research that substantially progresses this topic is included.

Coding Studies

For identifying relevant studies, an accurate data collection and coding process is needed. The selected literature is put through an organized review that includes finding and extracting relevant information about the points of view and methods used by researchers in correlating screen time to children's speech and language development. In order to code, qualitative and quantitative data must be systematically arranged, with a focus on important issues like screen time, children, speech, and language development. This methodology promotes the systematic arrangement and contrast of the various findings made by investigators, assisting in the identification of common trends, contradictions and weaknesses in the current collection of literature.

Assessing the Quality of Studies

To assess the validity and reliability of the initial integrated data. The methodological validity and credibility of each included study is determined using specific standards. In qualitative studies, the validity of collecting data techniques, the reflexivity of the researcher, and the consistency of results and interpretations are all carefully evaluated. A few elements influencing the standard of quantitative investigations are sample representativeness, statistical analysis, and the appropriateness of research methodologies and measurements. For research using mixed methods, a comprehensive evaluation technique is employed, taking into account the advantages and disadvantages of both the qualitative and quantitative components. By ensuring that only studies with high methodological quality are included in the synthesized findings, this thorough evaluation lowers biases and improves the accuracy of the review's conclusions.

Synthesizing Result of Studies

The combined data from the selected research is analyzed to look for common correlation differences. The relationship between screen time and children's speech and language development can be complicated and complex, despite the fact that data suggests a possible relationship. In addition to keeping abreast of the most recent research findings, parents, caregivers, and educators should take into consideration the context, substance, and grade of screen activities when determining the appropriate amount of screen time for their children.

Reporting Findings

The systematic review's findings are reported according to generally accepted procedures. The introduction, literature review, methods, results and discussion, and conclusion sections of the study address the connection between screen usage and youngsters' language development.

Findings

Several studies investigate that screen time affects children' language development. There are 7 research studies reviewed conducting this paper, to get answers to the research questions.

Table 1. *The empirical articles on correlation screen time and children's language development*

No	Sample Articles	Screen Time	Childrens' Language Development
1	Alibrahim (2023)	The research found a substantial ($P < 0.034$) correlation between language development and using mobile devices for longer than two hours. This is consistent with a number of other research findings that connect over two hours of screen exposure to a delay in language development.	About 4 to 5% of 2-year-old toddlers still show language delays three years later, compared to 10 to 15% of 2-year-old children.
2	Dewi et al. (2023)	Among children aged 1-2 years, the risk of speech delay increases 6.2 times when screen time exceeds two hours each day. Speech delay has been correlated to the usage of screen media, particularly when it comes to screen time.	One of the most common and often occurring disorders of development in children was speech delay. In addition, speech delay was associated with male gender and low parental education.
3	Bhutani et al. (2023)	The percentage of the study population exposed to videos on television, mobile phones, or other sources has been published in five of the sixteen research publications that were analyzed.	There were varying reports of delayed language development in five population-based studies. Patients at a children's hospital provided data to Lin et al., who found that 49.3% of kids who watched television for more than two hours a day had delayed language development.
4	McArthur et al. (2021)	Preschoolers were the subject of this investigation. Screen usage and behavioral, linguistic, and developmental metrics are related.	Children who do not have access to screens spend more than two to three hours a day, but less than an hour. A greater possibility of dangerous behavior issues and delays progress in development and language learning.
5	Panjeti-Madan & Ranganathan (2023)	The study shows that in the COVID-19 pandemic periods, children's screen usage increased for recreational, educational, and general purposes, in contrast with pre-pandemic screen use.	The usage of media by younger children is damaging to their growth and well-being. It impairs their ability to focus and pay attention, sleep, physical activity, language development, and communication, as well as their socioemotional and behavioral health. Therefore, there is a link between a child's development and how much time they spend

			on screens.
6	Veraksa et al. (2021)	The amount of time the child spends interacting with smart screen media is low and has no effect on the preschooler's phonological memory development.	The results of the study demonstrated that, over the course of a year, children's phonological memory development advances unaffected by either passive or active use of digital devices.
7	Al-Hosani et al. (2023)	The results of this study will assist your readers in comprehending the possible effects of screen time on both new and traditional technologies.	By analyzing language milestones and the results of the Receptive-Expressive Emergent Language Test, language delay was detected (RELT). Variables related to television consumption as well as parent and kid traits were questioned for both groups. The odds ratio was utilized to determine whether screen time from watching TV or using electronic devices (tablets and smartphones) had an impact on the development of speech and language.
8	Widoyoko (2022)	Parents often believe that children's excessive screen time can harm their development, especially their language development.	Additionally, the results showed that parents' responses were actually far more likely to be critical, underscoring the negative effects of early technology use on a child's development of their emotional, physical, and other abilities.
9	Pediatric Academic Societies Meeting (2017)	Researchers discovered that a child's likelihood of experiencing expressive speech delays increased with the amount of handheld screen time the parent documented for their child, based on a language delay screening device.	A forty nine percent higher risk of expressive speech delay was observed by researchers when taking into account every extra thirty minutes spent using a mobile phone or tablet. Mobile device screen time did not seem to be related to delays in other forms of communication, including body language, gestures, or social interactions.
10	Mustonen et al. (2022)	Comprehensive information on study relationships was provided, screen time and language skills in preschool children.	Low development and limited vocabulary are the main effects of screen time. General linguistic capabilities of children.

In research published by Alibrahim (2023) examined the connection between Saudi children' language development, screen usage, and content categories. Fifty children between the ages of two and five are included in the study, which analyzes parent-provided data. Language delay rates, screen time patterns, content preferences, and demographic factors are among the key results. According to the study, language development problems are associated with screen use going over two hours and a significant percentage of language delay in Riyadh. Additionally, the variety of content watched—especially instructional as opposed to recreational videos—has a big impact on language proficiency. Additionally addressed are differences in gender and the effects of mothers' employment on language development. The study places a strong emphasis on the value of early intervention and increasing parents' and educators' awareness of the used screen time and its potential effects on the language development of Saudi children. The results provide important new information for creating focused interventions to alleviate language difficulties in this population.

Dewi et al. (2023) The study's findings indicate a substantial correlation (p=0.001) between parental education and speech delay, with children's language development benefiting from higher-educated parents. The other study's conclusion that a child's linguistic development and social economy position are associated was corroborated by this one which education measures. Any action done by an adult (parent) to guide their child's physical and psychological growth into maturity is referred to as education. In the modern era, education is crucial. Someone who has received enough education will be able to determine which is right and use it to their advantage as well as that of those in need. Parents with education typically have very high expectations and aspirations in the direction of their kids. Parents will provide hands-on assistance, such as aiding their kids in learning vocabulary, in order to help them outperform kids whose parents have lower educational attainment. The multifactorial logistic analysis final model did not include low-income levels, the lack of stimulations, or the primary caregivers' non-parental status as relevant factors. The relationship between social participation and speech delay has to be further investigated. It was found that children between the ages of one and two who use screens for more than two hours a day are 6.2 times more likely to experience speech delay. Speaking delays have been associated with males and parents with lower levels of education.

Research by Bhutani et al. (2023) emphasize comprehensive investigation was carried out regarding screen usage and its effects on language development, based on a review of sixteen research studies. Among the results, information on the frequency of video exposure from televisions, mobile phones, and other sources was supplied by five studies. Dore et al. (2020) found that 95.2% of children over the age of two were exposed to video content nearly every day, and 60.2% of children over the age of two watched for more than two hours a day. With a median of 82%, the proportion of children under two who were exposed to videos varied from 57% to 96.7%. Five population-based studies on language development show varying rates of delayed language development, ranging from 7.8% to 14.8%. Surprisingly, Lin et al. discovered that language development issues affected 49.3% of kids who watched television for more than two hours a day. Five of the studies that looked at the relationship between excessive screen time and delayed language development found a substantial one, while eight studies that examined the relationship between screen time and language development in young children found no relationship at all. However, well-crafted curricula may help students' growth of vocabulary and

expressive language in educational settings (Linebarger and Walker, 2005). Three studies discovered a strong link between children between the ages of two and five who use screens excessively and delayed language development; three other studies did not find a significant correlation. One notable study emphasized the benefits of child-directed educational programming and parent-regulated television viewing time. Table 1 presents the condensed data, which summarizes the main conclusions from the analyzed studies on screen usage and how it affects language development.

A study conducted by McArthur et al. (2021) found a relationship between screen time and important measures of a child's development, such as behavior, general development, and language proficiency. Preschoolers have been shown to be more prone to experience behavioral issues if they use screens for more than two or three hours a day. Limiting screen usage to one hour or less per day can help prevent delays in language acquisition and development that are additionally related to excessive exposure. These research findings have serious effects for families, policymakers, and caregivers. Through exposing specific correlations between varying degrees of screen time and distinct metrics of child development, this research offers significant insights to guide decision-making procedures. Therefore, the results provide evidence for the design and implementation of family-centered media recommendations. These guidelines should encourage the balanced and age-appropriate integration of technology into children's lives during sensitive periods of development.

Panjeti-Madan et al. (2023) conducted research on the effects that children of different ages had when accessing digital media on screens. The research indicates that screen time is rising for all age groups, including preschoolers, school-age children, toddlers, and newborns. The possible advantages and disadvantages of screen time with regard to many developmental domains, including physical, cognitive, linguistic, social, and emotional, are particularly discussed in this research. Screen time offers several benefits, including improving the education of children through educational apps, allowing family video conversations, providing kids with educational materials, exposing them to a variety of viewpoints, and eventually promoting their creativity and self-expression. Technological addiction, raised stress levels, a decrease in physical activity, sleep deprivation, psychological distress, interpersonal challenges, and behavioral problems are a few of the negative impacts. Despite the fact that digital media and technology are dominant in contemporary culture, little is known about how they affect children's development, even if their use has increased. Further investigation is required to assess the intricate relationship between screen time and several developmental domains from the perspectives of various stakeholders in order to provide evidence-based guidelines and recommendations for children's use of healthy media. Furthermore, the COVID-19 epidemic exacerbated social isolation and remote learning, raising the possibility that a child's growing screen time could have a detrimental effect on their development across several domains. Parents, educators, and other caregivers must therefore be aware of the possible risks associated with excessive screen use. Consider your options and take steps to reduce these dangers. Screen time must be balanced with other forms of play and social contacts, though, in order to promote young children's healthy development. In addition, the American Academy of Pediatrics and the World Health Organization have provided recommendations and guidelines for encouraging children to use media in a healthy way. These recommendations emphasize the significance of setting screen time limits, selecting age-appropriate media, and encouraging parental involvement and monitoring of their children's media use.

The primary goal of this study was to determine the relationship between a child's active and passive screen time and phonological memory, according to a study by Veraksa et al. (2021). Finding out how screen time affected preschoolers' phonological memory development was the main goal of the study. The findings that follow were made after the data was analyzed in relation to the study questions: The following conclusions were noted: The following findings were made: (1) preschoolers' developmental outcomes varied depending on how much time they spent using screens; (2) television watching had a negative impact on phonological memory development; (3) there was no significant correlation found between phonological memory and smart device interaction; and (4) the degree of maternal education was found to be a significant predictor of phonological memory development in preschoolers. The results showed that watching television in particular or engaging in passive screen time was an important indication of preschoolers' phonological memory development. Daily television viewing for longer periods of time was related to lower phonological memory task performance. These findings are consistent with earlier research showing a connection between watching television and delayed speech development. However, poor correlation coefficients and the insignificance of several studies after multiple testing correction call for care when interpreting the results. These results may have been influenced by the study's sample size and features, which included 122 preschool-aged children. More research with more focused questions about the details of screen usage is recommended. The study additionally explored how maternal education affects the development of phonological memory. The significance of the family situation was highlighted by the identification of higher maternal education as a major predictor. Preschoolers' phonological memory development was not found to be statistically significantly predicted by gender differences in screen usage. The outcomes were consistent with earlier studies showing the detrimental effects of television viewing on a range of cognitive processes. Although the study did not support the idea that smart screen technologies improve speech and literacy development, it did highlight the importance of carefully evaluating the content that children consume in their media. The study stressed the need for high-quality content while acknowledging the inconsistent nature of previous studies on how media use affects literacy and cognitive development. The relationship between parents and children, the educational environment, and the food consumed were all examined as potential influences of family context on the development of phonological memory in this study. The study's limitations were recognized and these included the lack of respect for content elements and its focus on parental responses. In order to gain a deeper understanding of the relationship between screen time, family setting, and preschoolers' development of phonological memory, the authors emphasized the necessity for additional longitudinal research. In its conclusion, the study acknowledged the value of its preliminary findings in clarifying the possible connection between children's screen time and phonological memory.

The study by Al-Hosani et al. (2023) included 277 age- and gender-matched cohorts of children with language deficits and 277 controls with typical language development. Of the children in the sample, 26.9% were 37 months or older, 36.1% were 24 months or older, and 37.0% were younger than 24 months. 54.2% of the participants in the case and control groups were male. This study's primary objective was to ascertain the effects of screen time—whether from television or electronic devices—on the development of speech and language, as well as the elements that anticipate delays in language. Overall, this study supports the theory that there is a correlation between high screen time and early start, defined as before the age of two years. Table 3: Multivariate logistic regression associations TV viewing/day (h): the total number of

hours a child watched television each day. interval of confidence (CI). The p-value for the modified OR (95% CI) has a device (yes). Starting to use electronic devices (25–36 months) <0.001 0.32 (0.13–0.82) = 3.94 (1.97–7.84) 0.017 hours (3–4) of TV viewing per day 3.21 (1.66–6.17) <0.001 preschoolers' delayed language and time. The factors that influence language and speech delay include the swift development of the electronic device and the use of the device. However, a PhD or master's degree has shown that there is not much evidence relating the mother's and the mother's watching of TV to speech and language delays.

Widoyoko (2022) stated there are parents who have the different opinion that there is no meaningful correlation between screen time and speech delay symptoms, according to a review of certain research findings on parents' perspectives on these issues. screen time for children and their language development. In contrast, parents believe that excessive screen time affects language development and may result in symptoms like speech difficulty. The review's findings also supported the idea that extended screen time and gadget exposure may contribute to developmental delays in language learning and communication. Additional research has indicated a linguistic risk in toddlers who spend a lot of time on screens. A different study found that early childhood language development was negatively impacted by exposure to electronic media, including TV and gadgets. The researchers found that direct engagement with parents and families can have a major impact on early childhood development and recommended testing of additional variables.

Pediatric Academic Societies Meeting (2017) discussed Issues throughout potential developmental effects have been raised in recent years due to the increasing popularity of portable gadgets among young children. This study investigates the relationship between infants aged 6 to 24 months and communication issues when using handheld screens. Between September 2011 and December 2015, 1077 children who were part of the Target Kids, a practice-based research network, had data collected using a cross-sectional design. For the purpose of diagnosing communication difficulties, parents supplied data regarding their child's daily handheld screen usage, and the Infant Toddler Checklist (ITC) was utilized. A logistic regression analysis revealed a strong association between the amount of time spent on handheld devices and the delay of expressive speech, even after controlling for relevant factors. Children who used portable screens at all had a stronger correlation with this association. Among the whole group and among those who had any handheld screen time, no significant correlation was seen between handheld screen time and other communication delays. These results highlight the need for more study to inform guidelines for restricting infants' exposure to handheld screens and to investigate the processes underlying this link, such as the influence of parent-child interactions on portable devices.

Concerning the relation to this study, Mustonen et al. (2022) offered thorough and in-depth details. Children in preschool who use screens and their linguistic skills. As a result, moms watch alone more often and kids spend more time alone with devices. Screen time generally correlates with poor development and a limited vocabulary. Children's general language skills. Therefore, speech pathologists must address this issue. Questions about your family's screen time as part of your child's language assessment. The current findings suggest that future research should examine screen time holistically. For families, the overall potential cumulative effects on children and parents are considered in detail. Screen time for language skills in general and

vocabulary skills in particular. portrait orientation. This design also provides more information on long-term effects in children. Parents' screen time focuses on language development.

DISCUSSION

The systematic literature provided a thorough summary of studies on the connection between children' screen usage and language development. Several factors are emphasized, including screen types, duration, and the possible negative effects of excessive screen time. This review focused on studies presented by Mustonen et al. (2022), Panjeti-Madan & Ranganathan (2023), Veraksa et al. (2021), Al Hosani et al. (2023), Widoyoko (2022), Dewi et al. (2023), McArthur et al. (2021), Panjeti-Madan & Ranganathan (2023), Mustonen et al. (2022). The aim of this review was to critically analyze and discuss the research findings, methods, and results.

Relationship between Screen Time and Language Development: Ibrahim (2023) and Dewi et al. (2023) have found a significant correlation between children's longer screen time and delayed language development. Alibrahim's research highlights the continuation of language delays even beyond three years, whereas Dewi et al. link speech delay to screen media use, male gender, and low parental education. These results support earlier studies and point to a pattern that appears to be constant across various populations.

Screen Time Duration and Delayed Language Development: Bhuthani et al. (2023) and Lin et al. (2023) focus attention to the impact of various screen times on language development. Variable incidences of delayed language development are reported by Bhutani et al. while Lin et al. discovered a relationship between a high prevalence of language delays and daily television viewing of more than two hours. By emphasizing that screen time surpassing two to three hours per day increases the likelihood of behavioral issues and developmental delays, McArthur et al. (2021) expand this viewpoint to preschoolers. During the COVID-19 epidemic, screen time habits changed. Panjeti-Madan & Ranganathan (2023) provided insight into these changes. Their research discovered that children's screen time arose overall during this period, negatively impacting their growth and well-being. This highlights how important it is to consider the social and environmental factors that affect children's screen usage and development. Smart Screen Media and Phonological Memory: Despite the negative associations discovered in earlier research, Veraksa et al. (2021) contend that preschoolers' phonological memory development is not harmed by the amount of time they spend interacting with smart screen media. This offers a nuanced viewpoint, highlighting the need for more research into the particulars of screen content and how it affects different facets of child development.

Parental Viewpoints on Screen Time: Widoyoko (2022) investigates parents' perceptions of the possible harm that excessive screen time may do to kids' development. The results show that parents generally have an unfavorable opinion of early technology use, especially when it comes to language development. This emphasizes how crucial it is for treatments and educational initiatives to take parental attitudes and beliefs into consideration. Expressive Speech Delays with Handheld Devices: Important new information was given at the 2017 Pediatric Academic Societies Meeting by a study that relates mobile screen usage and expressive speech delays. The quantitative measure of a 49% increased risk of expressive speech delay with every additional thirty minutes on a portable device illustrates the precise influence of screen use on certain language abilities. Thorough Study Relationships: Mustonen et al. (2022) provide an extensive

overview of the connections between kids' screen time and language development, connecting it to both low vocabulary and language development in general. This study highlights its importance of understanding screen time's effects on language abilities holistically as opposed to concentrating only on particular areas.

This comprehensive critical analysis provides insight into the complex relationship between children's screen time and language development by thoroughly reviewing a number of studies. Although the reviewed studies generally showed negative effects on language skills, Veraksa et al. (2021) provide a nuanced perspective that provides complexities to our understanding of this association. Additionally, their results highlighted the fact that there is considerable variation in the negative effects of screen time on language development, depending on factors like the type of content on the screen. Veraksa et al. (2021) emphasized how crucial it is to distinguish between information that is beneficial and content that is entertainment oriented, arguing that the types of materials children interact with have a significant impact on their language development. The discovery needs a more thorough examination of screen content and its effects on language development, challenging the more general downward trend found in the research under review.

CONCLUSION

As a result of the systematic literature review, there is an important amount of data that supports the belief that children's language development and screen time are related. The reviewed studies consistently show how much screen time negatively affects several aspects of language skills, from delays in expressive speaking to overall language development. However, there is a study that highlighted the necessity of a more thorough investigation into the kind and content of screen interactions, since their research indicates a little effect on the formation of phonological memory. A comprehensive understanding of the complicated relationship between screen time and language outcomes which span several age groups, screen types, and socio environmental contexts is made possible by the multiple approaches used in the studies. Future research should focus on exploring deeper into the details of screen interactions and their quality, as well as investigating potential mitigating factors. Interventions and educational programs that support responsible screen-time practices should also be created and properly evaluated. In the end, this research offers insightful advice to policymakers, parents, and educators on how to create rules that promote children's healthy screen habits and minimize any negative impacts on language development.

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