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Investigating the relationship between screen viewing and social skills and language development in children

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ABSTRACT

Introduction: Childhood, as the most sensitive stage of human development, plays a decisive role in the formation of language and social skills. With the spread of digital technologies, the use of screens has become an integral part of children's lives. This study aimed to investigate the relationship between the duration of screen time and the language development and social skills of 4- to 8-year-old children in Zanjan.

Method: This study was fundamental in terms of purpose and descriptive-correlational in terms of method. The statistical population included all 4- to 8-year-old children in kindergartens and educational centers in Zanjan in the academic year 2023-2024, from which 160 individuals were selected using the convenience sampling method. The research tools included the Screen Time Questionnaire (Vizcaino et al., 2019), the Language Development Questionnaire (Faramarzi et al., 2018), and the Matson Social Skills Questionnaire (1938). The data were analyzed using the Pearson correlation coefficient and linear regression in SPSS version 26 software.

Findings: The results showed that there is an inverse and significant relationship between the duration of screen use and children's language development (*r* = -0.56, *p* < 0.01). Also, a positive and significant relationship was observed between the duration of screen use and social skills (both healthy and unhealthy) (*r* = 0.55, *p* < 0.01). Regression analysis showed that screen time predicted 30% of the variation in language development and 27% of the variation in social skills.

Conclusion: The findings indicate that increased screen time is associated with reduced language development and changes in children's social skills. It is suggested that parents and educators help children develop optimally by regulating media programs and encouraging face-to-face interactions. It is also necessary to hold educational workshops to educate families about the effects of screens

Introduction

Childhood, as the most fundamental stage of human development, is vitally important in many ways. This sensitive period, which spans from birth to about twelve years of age, not only forms the physical and motor foundations of the individual (Sundqvist et al., 2021) but also forms the basis for cognitive, emotional, and social development (Reilly et al., 2023). The quality of experiences and learning during these golden years can have a lasting and profound impact on all aspects of a person's future life. Among these, the development of social skills, as one of the most important components of personal development, plays a decisive role in a child's future educational, career, and interpersonal success (Rithipukdee et al., 2022). These skills are especially important in the early years of life when the brain is at its most flexible and capable. It has learning, takes shape, and becomes fixed (Donnelly et al., 2021).

Social skills can be defined as a complex set of cognitive, emotional, and behavioral abilities that enable an individual to function appropriately and adaptively in different social contexts (Sørlie et al., 2021). These skills include a wide range of abilities, including recognizing and interpreting social cues, regulating emotions, working in groups, solving interpersonal problems, empathy, and the ability to communicate effectively. The development of these skills is a gradual process that begins with the child's first interactions with primary caregivers and gradually becomes more complex and sophisticated as the child's social circle expands (Khusnidakhon et al., 2021). In this process, numerous factors, including family upbringing patterns, the quality of peer relationships, and the interaction opportunities available to the child, play a determining role (Beaumont et al., 2021). Among all these factors, the development of the child's language and communication abilities is one of the most fundamental. The needs for social skills development are recognized (Sun et al., 2022).

The development of language and communication skills is an amazing and multidimensional process that begins in the first months of life. This process includes not only the acquisition of vocabulary and grammatical rules (Sundqvist et al., 2021) but also involves the development of functional language skills such as the ability to initiate and maintain a conversation, understand what others mean, and appropriately express thoughts and feelings (Reilly & McKean et al., 2023). Research has shown that optimal language development requires rich and meaningful language interactions in which the child is not just a passive listener but an active participant in conversations (Mustoip et al., 2023). In the past, these interactions took place mainly within the framework of face-to-face relationships with parents, educators, and peers. However, in the present era, with the expansion of digital technologies, children spend a significant portion of their waking time interacting with various screens (Donnelly & Kidd et al., 2021). This change in interaction patterns raises important questions about the impact of these media on children's language and social development (Iverson et al., 2021).

Digital screens in various forms, including televisions, tablets, smartphones, computers, and game consoles, have become an inseparable part of the living environment of contemporary children (Castaño-Vinyals et al., 2022). On the one hand, these tools allow access to quality educational content, rich cultural programs, and opportunities for interactive learning. On the other hand, as attractive entertainment tools, they play a major role in children's leisure time. The unique features of these media, such as high visual appeal, multi-sensory stimulation, and the possibility of relative control over content, have made them very effective media (Lukitowati et al., 2022). However, the nature of these media has raised concerns about their long-term effects on children's development (Hardel & Moskowitz et al., 2023). Especially when the use of these tools goes beyond the usual limits and becomes a substitute for real human interactions (Gao et al., 2022).

Uncontrolled and excessive use of screens can have worrying consequences for children's overall development. From a language development perspective, reduced opportunities for real conversation and receiving corrective feedback can lead to delayed vocabulary development, poor grammatical skills, and limitations in pragmatic language abilities (Bayat et al., 2023). From a social development perspective, substituting virtual interactions for real-life relationships may lead to poor understanding of nonverbal cues, reduced ability to empathize, and difficulties in resolving interpersonal conflicts

(Naeim et al., 2021). Inappropriate media content can also instill unhealthy communication patterns in children. Research shows that children who spend too much time on screens (Schwarzer et al., 2022) often face problems in real social situations, such as excessive shyness, aggression, or social isolation (Ahmed et al., 2023). These findings highlight the importance of carefully examining the relationship between the amount and type of screen use and children's language and social development (Bakht et al., 2022).

Scientific investigation of the relationship between screen time and children's language and social skills development is important for several reasons. First, the findings of such research can help parents and educators regulate children's media programs based on scientific principles. Second, the results of this study can provide a basis for designing educational programs and interventions that integrate the appropriate use of technology with children's developmental needs. From a theoretical perspective, this research can help to better understand the mechanisms of digital media's impact on children's cognitive and social development. On a larger scale, the findings of this research can form the basis for educational and media policies at the national level. Given the increasing pace of technological developments and the growing influence of digital media in children's lives, conducting in-depth and comprehensive research in this area seems not only useful but also necessary. This study can help improve the quality of future generation development by filling gaps in the research literature.

Method

This study was of a fundamental nature in terms of its purpose and descriptive and correlational in terms of its data collection method. The statistical population of this study consisted of all 4- to 8-year-old children in kindergartens and educational centers in Zanjan city in the academic year 1402–1403. The sampling method was carried out by convenience, and the sample size was calculated based on the Cochran formula as 160 people. The inclusion criteria for the study included 4- to 8-year-old children of both sexes who were free from any psychiatric problems, hearing and visual disorders, and physical disabilities. These children entered the research process only if their parents provided written consent and were directly accompanied by them. On the other hand, exclusion criteria included children who were outside the specified age range or had physical problems that could have affected the results and might have confounded the study findings. Children whose parents did not provide the necessary consent were also excluded from the research process.

To conduct the research, the necessary permits and code of ethics were obtained from the university and the relevant research vice-chancellor. The data collection method was carried out in the field and through the distribution of questionnaires among volunteer parents. Before the distribution of the questionnaires, the informed consent form was made available to the parents, and the researcher discussed with them in person about the objectives and importance of the research to resolve any ambiguities. Also, to increase participation, explanations were provided about the potential benefits of the research results for other parents. Throughout the research process, strict adherence to ethical standards was emphasized, and parents were assured that their information would remain confidential. All questionnaires were completed by parents, and no interventions were performed on the children. Ethical considerations included protecting the privacy of participants, interpreting results upon request, providing guidance in the case of identifying disorders, not imposing financial costs on families, ensuring the research fully conformed to the religious and cultural values of the society, obtaining informed consent, coding the data to avoid identifying individuals, and making questionnaires available to both parents.

In the data analysis section, descriptive statistics methods were used, including calculating frequency, percentage, mean, and standard deviation. Then, in the inferential statistics section, the normality of the data distribution was examined with the Renf-Kolmogorov test, and Pearson correlation coefficient and regression were used to analyze the relationships between independent variables.

The tools of this research were:

1. The Screen Time Questionnaire, which was one of the main instruments of this study, was designed by Vizcaíno et al. in 2019. This questionnaire consisted of 18 items that measured

the amount of screen use during weekdays and weekends separately. In this instrument, five common screen-based devices were evaluated, including smartphones, tablets, laptops/computers, televisions, and devices connected to televisions. Parents were asked to estimate the average time their child spent using screens on a typical weekday (from waking up to bedtime) and to determine how much of their child's time was spent using these devices as a primary activity. Participants were required to report the total time spent using each device in hours and minutes, to the minute. Sakineh Sultani Kohbanani conducted a study in 2023 to examine the psychometric properties of this questionnaire in children. Her statistical population consisted of all male students aged 8 to 12 in Mashhad in the 2021–2022 academic year, from which 90 students who referred to counseling clinics with complaints of addiction to phones and tablets were selected as a sample.

The translation and localization process of this questionnaire included several steps: first, the original version was translated into Persian by the researcher and a psychology professor; then, to ensure the accuracy of the translation, the Persian version was translated back into English by an English language expert; and finally, after several stages of editing and comparison with the original version, the final questionnaire was ready to be administered. The validity of this tool in the present research was 0.89.

2. The Language Development Questionnaire consisted of 104 questions designed to assess the language development of children from birth to 8 years of age. This questionnaire assessed language development in ten different periods, including birth to 4 months, 4 to 8 months, 8 to 12 months, 12 to 18 months, 18 to 24 months, 2 to 3 years, 3 to 4 years, 4 to 5 years, 5 to 6 years, and 6 to 8 years. Scoring was based on a 5-point Likert scale, where the option "very little" received a score of 1, "little" a score of 2, "neither little nor much" a score of 3, "much" a score of 4, and "very much" a score of 5.

This questionnaire had 10 dimensions, each of which was related to a specific age range and included specific questions: Questions 1 to 6 for birth to 4 months, 7 to 13 for 4 to 8 months, 14 to 23 for 8 to 12 months, 24 to 31 for 12 to 18 months, 32 to 41 for 18 to 24 months, 41 to 61 for 2 to 3 years, 62 to 71 for 3 to 4 years, 72 to 80 for 4 to 5 years, 81 to 95 for 5 to 6 years, and 96 to 104 for 6 to 8 years. To calculate the score for each dimension, the total score of the questions related to that section was calculated.

The construct, face, and content validity of this questionnaire were confirmed by university professors in a study by Faramarzi et al. in 2018, and its Cronbach's alpha coefficient was calculated to be 0.98. In 2018, Faramarzi and his colleagues conducted a study on the construct validity and reliability of a scale for children’s language development. They went through several stages to design this questionnaire: first, the preliminary design of the scale was prepared by considering the characteristics of children’s language development; then, a preliminary version was presented to developmental specialists and speech and language pathologists, and their comments were received. In the next stage, the preliminary scale was administered to a sample of children by asking their parents. After statistical and qualitative analysis of the data from the preliminary stage, the necessary amendments were made to the questionnaire. In the final stage, the revised scale was administered to the original statistical sample of the study, and the resulting data were analyzed.

The results of this process showed that the reliability coefficient of the entire scale using Cronbach's alpha was 0.98, and the reliability coefficient of its two factors was 0.96, indicating high reliability of the instrument. In addition, the findings indicated acceptable construct validity of this scale for diagnostic and research uses. In the present study, Cronbach's alpha was 0.93.

3. The Matson Social Skills Development Questionnaire was designed in 1983 by Matson et al. to measure the social skills of children aged 4 to 18. This questionnaire consisted of 55 questions that assessed five main factors of social skills:

- Appropriate social behavior (questions 1 to 18), which included skills such as appropriate eye contact, observing social etiquette, and the desire to interact effectively with others;
- Antisocial behavior (questions 19 to 29), which included behaviors such as lying, hitting, and making abnormal noises;
- Aggression and impulsive behavior (questions 30 to 40), which included quick temper and stubbornness;
- Overconfidence (questions 41 to 46), which measured egocentric and superior behaviors;
- Peer relationships (questions 47 to 55), which measured feelings of loneliness and jealousy.

Scoring was based on a 5-point Likert scale (from 1 to 5). The validity of this questionnaire was confirmed by Darwish in 2009, and its reliability was calculated with a Cronbach's alpha coefficient of 0.86. Yousef and colleagues also confirmed the validity, reliability, and factor structure of this instrument in a study of 562 high school students in 2009. In 2020, Aminipouzeh and Saleh used this questionnaire in a study of 600 high school students in Isfahan between 2016 and 2018 and found a significant relationship between social skills and addiction prevention. In the present study, Cronbach's alpha was 0.81.

Findings

Demographic data analysis showed that most participating mothers had a bachelor's degree (54%), and most fathers had a diploma or postgraduate diploma (44%). Of the 160 students, 52% were boys and 48% were girls, with the highest age group being 6 years old for boys (26%) and 6 years old for girls (25%). The lowest frequency of education in both groups of parents was related to a doctorate degree (mothers 2% and fathers 3%), and the lowest age group was 5 years old for girls (14%). Table 1 shows the detailed demographic data.

Table 1: demographic data

Row/Number	Specifications	Mothers	Fathers	Male students	Female students
1	Post - graduate - and post graduate studies	30(18.75%)	71(44.37%)	-	-
2	Studying Latille Sans	86(53.75%)	59(36.87%)	-	-
3	Postgraduate education	41(25.62%)	26(16.25%)	-	-
4	Doctoral studies	3(1.87%)	4(2.50%)	-	-
5	All parents	160(100%)	160(100%)	-	-
6	Gender	-	-	84(52.5%)	76(47.5%)
7	Age 4 years	-	-	15(17.85%)	18(23.68%)
8	Age 5 years	-	-	13(15.47%)	11(14.47%)
9	Age 6 years old	-	-	22(26.19%)	19(25.00%)

10	Age 7 years old	-	-	21(25.00%)	13(17.10%)
11	Age 8 years old	-	-	13(15.47%)	15(19.73%)
12	Total students	-	-	84(100%)	76(100%)

Table 2 shows the results of descriptive analyses of the research variables .

Table 2. Results of descriptive analyses of research variables

Variable	Group/Depth	Standard deviation	Average
Language development	4 to 5 years old	4.84	31.10
	5 to 6 years old	4.11	39.57
	6 to 8 years old	2.25	27.50
	Overall score	14.95	104.23
Social skills	Appropriate social behavior	5.48	42.66
	Antisocial behavior	1.50	29.82
	Aggression	2.72	30.15
	High self-confidence	2.39	18.77
	Communication with peers	4.06	33.61
Screen viewing rate	Number of views per day	2.73	16.10
	Viewing rate per night	2.01	3.25
	Viewership on weekends	3.17	74.39
	Viewership on weekend nights	3.10	71.81
	Background viewing rate	5.91	67.11
	Weekend viewership	3.60	32.47
	Total screen viewing score	11.19	72.41

Result C The table showed that in the area of language development, the 5-6 year old group had the highest score with a mean of 39.57, while the 6-8 year old group showed the lowest dispersion with a standard deviation of 2.25. In the area of social skills, appropriate social behavior had the highest score with a mean of 42.66, and antisocial behavior was the most stable dimension with a standard deviation of 1.50. In the case of screen viewing, the highest usage was reported on weekends with an average of 74.39 hours, and the total score of this variable, with a standard deviation of 11.19, showed the highest dispersion among all variables.

In the inferential analysis section of the study, first, the statistical assumptions were carefully examined. To examine the normality of the data distribution, the Kolmogorov-Smirnov test was used, and the results showed that all variables had a normal distribution ($p > 0.05$), with the highest significance level related to the total score of screen viewing (0.94) and the lowest related to language development at 6-8 years of age (0.42). In the next step, to ensure the absence of collinearity between the predictor variables, various indicators including the variance inflation factor (VIF), the amount of neglect, the eigenvalue, and the status index were used.

was calculated. The results showed that the values of VIF were between 3.15 and 15.19, the neglect value was close to 1, the specificity value was close to zero, and the condition index was less than 30, all of which confirmed the absence of collinearity between the independent variables. Also, the Durbin-Watson test was used to examine the independence of observations, and its values were between 1.94 and 1.97 for all independent variables, indicating the independence of observations. After verifying all these assumptions, conditions were provided for conducting parametric tests of Pearson correlation and multivariate linear regression, and analyses related to the research hypotheses were carried out while ensuring compliance with statistical principles.

Table 3. Correlation matrix between research variables (complete)

Variable		2	3	4	5	6	7	8	9	10	11	12	13
1. Number of views per day	1												
2. Number of viewers per night	1	1											
3. Viewership on weekends	-	-	1										
4. Nighttime viewing rate	-	-	-	1									
5. Background viewing rate	-	-	-	-	1								
6. Weekend viewership	-	-	-	-	-	1							
7. Total viewership score	-	-	-	-	-	-	1						
8. Language development years 5-4 old	-	-0.46	-0.45	-0.41	-0.48	-0.35	-0.49	1					
9. Language development years 6-5 old	-0.49	-0.40	-0.33	-0.42	-0.30	-0.37	-0.35	-	1				
10. Language development years 8-6 old	-0.32	-0.33	-0.25	-0.22	-0.27	-0.33	-0.25	-	-	1			
11. Overall language development score	-0.29	-0.41	-0.46	-0.40	-0.46	-0.49	-0.56	-	-	-	1		
12. Healthy Social Skills	0.55	0.49	0.52	0.37	0.42	0.45	0.38	-	-	-	-	1	
13. Unhealthy Social Skills	0.51	0.50	0.49	0.37	0.39	0.49	0.47	-	-	-	-	-	1

Result C Table 3 showed that there was an inverse and significant relationship between all dimensions of screen use and children's language development ($p < 0.01$), such that the highest level of this negative relationship was observed between the total screen use score and the total language development score, with a correlation coefficient of -0.56. On the other hand, data analysis indicated a direct and significant relationship between the duration of screen use and social skills ($p < 0.01$), and among these, the strongest positive relationship, with a coefficient of 0.55, was obtained between the duration of daily screen viewing and healthy social skills. These findings show that as screen time increases, children's language development decreases, while their social skills develop.

Table 4. Regression results for predicting language development based on screen viewing		
Regression indicators	Amount	Level of significance
Regression sum of squares	3391.443	-
Regression degrees of freedom	1	-
Mean of squares of regression	3391.443	-
The sum of the remaining squares	2958.707	-
Remaining degrees of freedom	158	-
The mean of the remaining squares	18.727	-
F value-	31.195	p<0.001
Coefficient of Determination((R^2	0.30	-
Adjusted fixed price	0.28	-
Correlation coefficient((R	0.56	-

The results of the regression analysis in Table 4 show that the predictive model of language development based on screen viewing time is statistically significant ($F = 31.195$, $p < 0.001$). The standardized coefficient ($\beta = -0.50$) indicates a relatively strong inverse relationship between these two variables, such that with increasing screen viewing time, screen time decreases language development. This model was able to explain about 30% of the variation in language development, indicating a significant contribution of screen time in predicting children's language development.

Table 5. Regression results for predicting healthy social skills

Regression indicators	Amount	Level of significance
Regression sum of squares	868.777	-
Regression degrees of freedom	1	-
Mean of squares of regression	868.777	-
F value-	8.961	p<0.001
Coefficient of Determination (R^2)	0.27	-
Correlation coefficient((R	0.52	-

The results of the regression analysis in Table 5 show that screen time is a positive and significant predictor of healthy social skills ($\beta = 0.52$, $t = 38.9$, $p < 0.001$). This model is statistically significant with an F value of 8.961 ($p < 0.001$), indicating that about 27% of the variation in social skills is explained by screen time. Children's healthy socialization (including effective peer communication and appropriate social behaviors) can be explained by the amount of screen time they spend. The findings suggest that as screen time increases, children's levels of these social skills improve.

Table 6. Regression results for predicting unhealthy social skills

Regression indicators	Amount	Level of significance
Regression sum of squares	250.112	-
Regression degrees of freedom	1	-
Mean of squares of regression	250.112	-
F value-	2.195	p<0.001
Coefficient of Determination((R^2	0.24	-
Correlation coefficient(R)	0.49	-

Table 6 shows a positive and significant relationship between screen time and unhealthy social skills using regression analysis ($\beta = 0.48$, $t = 31.5$, $p < 0.001$). This model, which is statistically significant ($F = 2.195$, $p < 0.001$), shows that 24% of the variation in unhealthy social skills (including antisocial

behavior, aggression, and overconfidence) is predicted by screen time. The findings suggest that increased screen time is associated with an increase in these types of unhealthy behaviors in children.

Discussion and Conclusion

The present study was designed and conducted to investigate the relationship between the amount of screen use and two basic variables of childhood development, namely social skills and language development. The results of this study indicate significant relationships between these variables, which are discussed in detail below.

The first important finding of this study showed that there is a significant inverse relationship between screen time and children's language development level. This finding is consistent with the results of the study by Jannisar et al. (2023). Several mechanisms can be cited to explain this relationship: First, screen time directly reduces the time spent on face-to-face interactions and two-way conversations between the child and caregiver (Sundqvist et al., 2021). These interactions are essential for language development, as it is in the context of these interactions that the child has the opportunity to practice language structures, learn new vocabulary, and develop communication skills. Second, the content of most screen programs is non-interactive and one-sided in nature and cannot be a suitable substitute for rich and dynamic language interactions (Reilly & McKean et al., 2023). Third, exposure to blue light from screens and stimulating content can disrupt sleep patterns, which in turn negatively affects cognitive and language development. Fourth, excessive screen use may reduce children's intrinsic motivation to communicate and engage in social interaction (Castaño-Vinyals et al., 2022). These findings clearly highlight the importance of regulating screen time and encouraging real-life social interactions for optimal language development in children (Gao et al., 2022).

The second main finding of the present study showed that there is a significant relationship between the duration of screen time and the level of social skills of children. These results are consistent with the findings of studies by Abolhasani (2017), Sudhar et al. (2023), and Ashja (2014). Longitudinal studies show that children who spend more time watching screens face significant difficulties in establishing social relationships in later life. Family interactions, as the most important context for the development of social skills, if replaced by watching screens, lead to a weakness in the acquisition of these vital skills (Bakht et al., 2022; Schwarzer et al., 2022). Children who have good social skills usually show a higher level of empathy and ability to communicate with others. Good social skills act as a necessary tool for maintaining and developing social relationships and adapting to society. Conversely, deficiencies in these skills can expose an individual to risks such as rejection by peers.

Good social skills are influential in all aspects of an individual's life, from play and learning in childhood to participation in work and leisure activities in adulthood (Bakht et al., 2022). These skills help a person avoid awkward social situations and adapt to the everyday demands of the social environment (Iverson et al., 2021). Research has shown that children with stronger social skills perform better in educational environments such as kindergarten and school (Hardel & Moskowitz et al., 2023).

The third research finding showed that children's language development can be predicted based on the amount of time they spend watching screens. In explaining this, it can be said that increasing screen time is not only not positively related to children's language abilities, but an inverse relationship has been observed between these two variables (Bayat et al., 2023). Studies show that children who spend more time on screens have lower language abilities. For optimal language development, children need multiple opportunities to hear and use language in the context of enjoyable interactions. The more time children spend interacting, playing, and talking with their parents and caregivers, the more opportunities they have to practice communication and learn new vocabulary (Rithipukdee et al., 2022). In contrast, when a child spends a long time alone watching screens, they miss out on opportunities for two-way interaction and conversation with others, and as a result, they spend less time learning and practicing communication skills (Khusnidakhon et al., 2021).

The fourth study found that children's social skills were also predicted based on screen time. Social skills are a set of acquired behaviors that are learned through observation, modeling, practice, and

feedback, and include verbal and nonverbal behaviors. These skills increase a person's ability to respond appropriately and effectively in social situations (Sun et al., 2022). Social skills can reduce anxiety in social situations, social inhibition, and worry about interpersonal evaluations (Sundqvist et al., 2021). The level of these skills in children has a direct impact on their personal and social health, as well as their educational success. The role of social skills in children's sociability and preparing them for a desirable life is completely undeniable. Human development, especially in the early years of life, is almost impossible without social interactions, or it will be very weak. Experiencing and processing different feelings and emotions, such as expressing desires, accepting, rejecting, laughing, physical contact, friendship, disagreement, reconciliation, understanding, mourning, and feeling safe, are all essential prerequisites for healthy emotional and social development (Beaumont et al., 2021; Mustoip et al., 2023).

If these experiences are not properly structured, not only can a person’s communication and social skills be impaired, but they may also lead to cognitive and physical problems. Children who spend a lot of time watching television (Sørlie et al., 2021) experience poor social skills in later life and have difficulty communicating with others. As the amount of time spent watching television increases, opportunities to interact with peers and family members decrease significantly, challenging the development of social skills (Beaumont et al., 2021).

Overall, it can be concluded that the present study investigated the relationship between screen time and two fundamental components of childhood development, namely social skills and language development. The findings showed that excessive screen use is associated with a decrease in children's language development and social skills, such that as screen time increases, opportunities for face-to-face interaction and two-way conversation, which are essential for language and social development, decrease.

This study also showed that children's language development and social skills are significantly affected by the duration of screen time and can be predicted based on this variable. The results of this study emphasize the importance of regulating screen time and encouraging real-world social interactions for children's optimal development.

Research Limitations and Recommendations:This study had several important limitations, including the use of convenience sampling, which limits the generalizability of the results; the lack of complete control for confounding factors such as family variability; the time constraints that did not allow for the examination of all influential factors; and challenges related to the accuracy of participant responses, which may have affected the quality of the data. In addition, the study population was limited to a specific group, which necessitates caution in generalizing the results to other populations.

Research Suggestions:For future studies, it is suggested that this variable be examined at different educational levels, experimental interventions be designed and implemented, and intervening variables such as parental interaction be considered. The use of diverse data collection methods such as interviews and observations, along with qualitative research with a grounded theory approach, can lead to a deeper understanding of the influencing factors.

Practical Suggestions:Holding parenting skills training workshops for parents, using the findings of this study in therapeutic consultations, and educating families about the negative effects of excessive screen time on children's development and communication are essential. Also, teaching methods for managing screen time and promoting positive parenting with an emphasis on effective parent-child interaction can help reduce negative consequences.

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