

The Influence of Technology and Social Media in Vocabulary Knowledge on Preschool Children: A Survey

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Abstract:

Social media has become an integral part of modern communication, influencing various aspects of daily life including education and entertainment. This study aims to investigate how social media affects vocabulary development and language semantics in preschool children, exploring the evolving role of the Internet and social platforms in shaping language acquisition during early childhood.

Methods: A questionnaire was distributed both in hard copy and online formats across multiple cities to 159 parents of preschool-aged children. Data collection involved a self-administered questionnaire developed by the researcher, comprising demographic inquiries and queries regarding technology usage habits of both parents and children.

Results: The study targeted preschool children aged two to five years old. Findings revealed that over one-third of households possessed two to three electronic devices, with mobile phones being the most frequently used by children to access social media platforms, particularly YouTube. Usage patterns varied, with almost half of the children spending one hour or less daily on electronic devices, while a few exceeded five hours. The impact of social media on language development exhibited both positive and negative aspects; children reported distractions and anxiety alongside opportunities for learning new vocabulary and phrases, including those from their mother tongue. Notably, children who had access to their own devices demonstrated higher language proficiency compared to those using family members' devices. Additionally, a negative correlation was observed between the number of siblings and language proficiency.

Conclusion: The findings underscore the significance of monitoring children's exposure to social media and electronic devices, recognizing their potential influence on preschoolers' language development. Notably, ownership of personal devices and reduced sibling count were associated with enhanced language skills, suggesting avenues for further research and targeted interventions to support language acquisition in early childhood.

Keywords: Vocabulary development, Social media, Language semantics, Preschool children.

Introduction

In the normal developmental milestones of language development, humans can successfully develop communication by having creativity and productivity. This means there is no limit to the utterances we can produce, even if they have never been heard before [1]. Language is an innate process, and all normal children follow the same sequence of milestones in language development. However, there are variations across languages worldwide.

The stages of language development begin with a baby's cries, coos, yells, vocalizations, and babbling. As the child progresses, they move on to producing their first words, which are influenced by the words they frequently hear. Language skills continue to develop with age, reaching an adult-like level, especially during the critical period in the first six years of a child's life [1, 2, 3].

The development of language in children is a remarkable process crucial for their mental maturity and education. It enables effective communication and strengthens relationships with others [3]. Several studies highlight gender differences in language development. Girls tend to speak earlier than boys and continue to develop language skills more rapidly [1,2, 3].

Additionally, language acquisition is influenced by auditory, visual, and verbal sensory organs. If a child's developmental history is uncomplicated, there is a greater likelihood of developing language skills within normal limits [4]. Furthermore, socioeconomic status plays a role in language development. Higher socioeconomic status is associated with better language development [3].

The 18th century was pivotal for English language development, witnessing the debut of dictionaries and grammars, laying the foundation for modern standards. Linguistic study during the 18th and 19th centuries established historical linguistics, leading to late 20th-century modern English with subtle shifts in syntax and vocabulary, alongside standardized pronunciation. This era also saw the rise of counseling, influencing attitudes towards spoken language. Despite expectations of linguistic evolution, variations persist, such as the avoidance of prepositional interruption in formal contexts [4, 5, 6].

Language plays a crucial role in communication and social development, enabling children to express needs, emotions, and thoughts, fostering effective interactions and understanding of others' perspectives [4, 6].

The widespread outbreak of COVID-19 brought about sudden changes in communication methods [8]. To minimize the spread, individuals adapted by wearing masks and maintaining social distance, altering nonverbal signals and transitioning to online communication platforms like video conferencing and messaging apps. This "new normal" has significantly impacted daily life and social interactions, with reduced face-to-face interactions and increased reliance on digital platforms [7].

Problem of the study

The problem statement highlights the profound impact of technology, particularly social media, on our daily lives. With its widespread availability and diverse uses ranging from education to entertainment, technology has become ingrained in modern society. The COVID-

19 pandemic further accelerated its integration into various aspects of life, including education [8].

This technological shift has implications for language development in preschoolers. As technology alters communication patterns and vocabulary usage, it is essential to understand how these changes affect language acquisition and semantics [7, 9]. Despite the prevalence of technology, there is a lack of research in Palestine specifically examining language changes in preschoolers.

Therefore, our study aims to investigate the evolving language development and semantics influenced by technology among preschoolers. By comparing language content in preschoolers today with previous generations, we seek to uncover the impact of technology on linguistic patterns. This study addresses a critical gap in research and provides insights into the changing landscape of language acquisition in the digital age.

Purpose of the study

The purpose of this study is to examine the influence of social media on vocabulary development and language semantics in preschool children, as well as to explore the broader impact of the Internet and social media on language usage among this demographic. By investigating these dynamics, the study aims to shed light on the evolving linguistic behaviors and patterns shaped by technology in preschool-aged children.

Significance of the study

This study holds significant implications for understanding the evolving relationship between technology, specifically social media, and language development in preschool children. As technology becomes increasingly integrated into daily life, it is essential to comprehend how digital platforms shape language acquisition and semantics during crucial developmental stages. By examining these interactions, the study contributes to our understanding of the broader impact of technology on childhood development and provides insights that can inform educational practices, parenting strategies, and policy decisions. Additionally, as there is limited research on this topic in Palestine, this study fills a crucial gap in the literature and offers valuable insights into the local context.

Questions of the Study

The study investigated the following questions:

1. What impact does technology and social media have on the vocabulary development of preschool children?
2. What are caregivers' perspectives on the utilization of technology and social media for enhancing the vocabulary of preschool children?

Method: This study employed a descriptive cross-sectional quantitative design, chosen for its ability to efficiently investigate multiple independent variables while also being time and cost-effective. Moreover, this design facilitated the exploration of correlations between independent and dependent variables to test hypotheses effectively. The study population consisted of preschool children aged two to five years from occupied Palestinian territories. Convenient sampling. Sample of 159 participants collected from selected Palestinian communities.

Data collection took place during the first semester of the fourth academic year, spanning from September 2021 to January 2022, providing a sufficient timeframe for data collection. Data were collected using a self-administered questionnaire developed by the researcher based on previous literature and expert feedback. The questionnaire comprised two main parts: demographic inquiries and questions related to technology and social media usage habits.

The questionnaire underwent review by speech-language pathologist (SLP) experts, who provided positive feedback and recommended enhancements. Statistical Package for the Social Sciences (SPSS) software was used for quantitative analysis, including descriptive and analytical methods.

Ethical approval was obtained from the Institutional Review Board, and informed consent was obtained from all participants. Participants were assured of confidentiality, anonymity, and voluntary participation, with the option to withdraw at any time without explanation.

Results: Table 1 shows the distribution of variables of study

Table 1: Distribution of variables of study

Variable	Values	Frequency	Percentage
Child's age	2 – 3 years old	15	9.4%
	3 – 4 years old	72	45.3%
	4 – 5 years old	72	45.3%
Child's gender	Male	88	55.3%
	Female	71	44.7%
Number of siblings	None	12	7.6%
	One sibling	45	28.3%
	Two siblings	46	28.9%
	Three siblings	38	23.9%
	More than three siblings	18	11.3%
Rank among siblings	First child	59	37.1%
	Second child	42	26.4%
	Third child	39	24.5%
	After the third child	19	11.9%
Father's job	Doesn't work	1	0.6%
	Labored work	113	71.1%
	Office work	45	28.3%
Mother's job	Housewife	61	38.4%
	Working	98	61.6%

Other people living with the family other than father and mother	Yes	11	6.9%
	No	148	93.1%
Residency	City	62	39.0%
	Town	61	38.4%
	Camp	36	22.6%

Effect of technology and social media on the preschoolers' language development

The findings in Table 2 indicate that more than one-third of the parents reported having two to three electronic devices (37.1%) in their households, followed by four to five devices (30.3%). Additionally, over a quarter of respondents (30.7%) reported having more than five devices, while a minority (1.9%) indicated having only one device.

Table 2: Distribution of responses regarding the number of electronic devices in the household

Question	Answers	F	%
Number of available electronics in the house	One device	4	2.5%
	Two to three devices	60	37.7%
	Four to five devices	48	30.2%
	More than five devices	46	28.9%

Table 3 illustrates that approximately half of the children (45.9%) spend one hour or less on electronic devices per day, while a slightly lower percentage (42.8%) spend 2 to 3 hours per day. A minority (6.9%) report spending four to five hours, and even fewer (4.4%) spend more than five hours per day using electronic devices.

Table 3: Distribution of children's daily hours spent on electronic devices

Question 2	Answers	F	%
Number of hours that the	One hour or less	73	45.9%

child spends in front of the mentioned electronic devices	Two to three hours	68	42.8%
	Four to five hours	11	6.9%
	More than five hours	7	4.4%

Table 4 illustrates that the preferred electronic device used by children is the mobile phone (39.0%), followed by television (28.9%), and tablets or laptops (10.1%). Additionally, 22.0% of children indicated no specific preference for an electronic device.

Table 4: Distribution of the most used electronic devices by children

Question 3	Answers	F	%
The type of device that the child is mainly using	Mobile phone	62	39.0%
	Television	46	28.9%
	Tablet / laptop	16	10.1%
	Nothing specific	35	22.0%

Table 5 demonstrates that approximately two-thirds of parents (66.7%) reported using social media platforms with their children while engaging in activities such as talking, playing, listening to songs, viewing photos, and browsing.

Table 5: Distribution of parents' use of social media platforms with their children

Question 4	Answers	F	%
Do you use social media platforms with your child when talking/playing... etc.?	Yes	106	66.7%
	No	53	33.3%

Table 6 displays that the most preferred social media platform used with children is TikTok (10.1%), followed by Facebook (5.7%) and Instagram (3.1%). The majority of parents indicated "other" platforms, with the main one being "YouTube" as reported by parents on the data sheet.

Table 6: Distribution of the most used social media platforms with their children

Question	Answers	F	%
If “Yes”, which of the following is the most used? (Multiple answers)	Facebook	9	5.7%
	Instagram	5	3.1%
	Tik Tok	16	10.1%
	Other	82	51.6%

Table 7 demonstrates that 88.1% of the children use electronic devices belonging to other family members, while only 11.9% own their own device.

Table 7: Distribution of children owning vs. using others’ devices

Question	Answers	F	%
Does your child possess his/her own device?	Has own device	19	11.9%
	Other family member’s device	140	88.1%

Table 8 presents the most common uses of social media platforms by parents, with 75.5% using them to watch kids' shows, followed by 44.7% who utilize them for educational programs, and 42.8% who use them to connect with relatives. Additionally, 23.9% of parents reported other uses.

Table 8: Distribution of social media platform uses

Question 6	Answers	F	%
How are social media and electronic device used by you? (Multiple answers)	Connecting with relatives	68	42.8%
	Watching kids shows	120	75.5%
	Watching different educational programs	71	44.7%
	Other	38	23.9%

Table 9 illustrates that approximately half of the parents (49.7%) acknowledged negative effects on children resulting from electronic devices and social media platforms. These effects

primarily include distraction, decreased concentration, adoption of phrases from other languages, and increased stress levels.

Table 9: Distribution of parents' perspectives on the negative effects of electronic devices and social media on children

Question 7	Answers	F	%
Do you think there are negative effects of the electronic and social media use on your child?	Yes	79	49.7%
	No	80	50.3%

Table 10 outlines that 69.2% of parents expressed positive effects of electronic devices and social media platforms, including the acquisition of new phrases from both the mother language and other languages. They believe these aids in enhancing communication processes and overall development.

Table 10: Distribution of parents' perspectives on the positive effects of electronic devices and social media on children

Question 8	Answers	F	%
Do you think there are positive effects of the electronic and social media use on your child?	Yes	110	69.2%
	No	49	30.8%

Table 11 demonstrates that nearly half of the parents (46.5%) reported that their children acquired specific terms related to social media platforms and electronic devices. These terms include "message," "microphone," "message record," "video," "subscribe," "like," "notification," "request," and others.

Table 11: Distribution of parents' perspectives on the positive effects of electronic devices and social media on children

Question 9	Answers	F	%
Upon your child's use, did he/she acquire specific terms related to them?	Yes	74	46.5%
	No	85	53.5%

Table 12 illustrates that the majority of parents (77.4%) described their children's language level as the highest among the provided answers. This indicates that the child understands several phrases and can produce three-word or more sentences.

Table 12: Distribution of parents' perspectives on the positive effects of electronic devices and social media on children

Question 10	Answers	F	%
Describe your child's language level	Understands and generates limited phrases	10	6.3%
	Understands several phrases but generates limited phrases	7	4.4%
	Understands several phrases and can generate one-word sentences	6	3.8%
	Understands several phrases and can generate two-word sentences	13	8.2%
	Understands several phrases and can generate three-word or more sentences	123	77.4%

The relationship between the independent variables and the development of the child's language

The following review the results related to the relationship between the independent variables and the development of the child's language level, in order to test its hypotheses.

Table 13 shows that there is no significant correlation between a child's age and the language level, as the Pearson correlation value is 0.078 but is insignificant (p-value = 0.378).

Table 13: Correlation between child's age and the mean language level

Independent variable	Pearson correlation value	p-value
Child's age	0.078	0.378

Table 14 shows that there is a higher mean of language level among females (4.51) than males (4.43), but is insignificant (p-value = 0.679).

Table 14: Relationship between child's gender and language level

Independent variable	Values	Mean language level (out of 5)	p-value
Child's gender	Male	4.43	0.679
	Female	4.51	

Table 15 shows that there is a significant correlation between child's number of siblings and the language level, as the Pearson correlation value is -0.171 but is insignificant (p-value = 0.032), meaning that increased number of siblings decreased language level.

Table 15: Correlation between child number of siblings and the mean language level

Independent variable	Pearson correlation value	p-value
Child's number of siblings	-0.171	0.032

Table 16 shows that there is no significant correlation between a child's rank among siblings and the language level, as the Pearson correlation value is -0.144 and is insignificant (p-value = 0.070).

Table 16 : Correlation between child's rank among siblings and the mean language level.

Independent variable	Pearson correlation value	p-value
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Child's rank among siblings	-0.144	0.070
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Table 17 shows that there is no significant correlation between a child's father or mother's age and the language level, as the Pearson correlation value is – 0.099 and – 0.130, respectively, and is insignificant (p-value = 0.217 and 0.103, respectively).

Table 17: Correlation between child's father's and mother's age and the mean language level.

Independent variable	Pearson correlation value	p-value
Father's age	-0.099	0.217
Mother's age	-0.130	0.103

Table 18 shows that there is no significant correlation between the number of electronics in the house and the language level, as the Pearson correlation value is 0.041 but is insignificant (p-value = 0.612).

Table 18: Correlation between number of electronic devices in the house and the mean language level.

Independent variable	Pearson correlation value	p-value
Number of electronics in house	0.041	0.612

Table 19 shows that there is no significant relationship between the time spent on electronic devices per day by children and their language level (p-value = 0.659).

Table 19: Relationship between child's gender and language level.

Independent variable	Values	Mean language level (out of 5)	p-value
Daily time spent on electronic devices	1 hour or less	4.54	0.659
	2-3 hours	4.41	
	4-5 hours	4.45	

	more than 5 hours	4.00	
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Table 20 shows that children who use their own device have a significantly higher language level (5.00) than children who use other family member’s electronic devices (4.37, p-value = 0.028).

Table 20: Relationship between children's own device vs other device and language level.

Independent variable	Values	Mean language level (out of 5)	p-value
Use of own vs other’s device	Own device	5.00	0.028
	Other’s device	4.37	

Table 21 shows no significant relationship between parents’ perceptions of the effect of electronic devices and social media platforms on the child’s development and the language level among children, either it was a negative perception (p-value = 0.173) or a positive perception (p-value = 0.397).

Table 21: Relationship between parents’ perception of electronic devices and social media effect and language level

Independent variable	Values	Mean language level (out of 5)	p-value
Parent’s perception of negative effect	Yes	4.33	0.173
	No	4.58	
Parent’s perception of positive effect	Yes	4.50	0.397
	No	4.33	

Discussion

The results show that over one-third of families own two to three electronic devices, with the fewest owning just one. Additionally, approximately half of the children spend one hour or less on electronic devices per day, while a minority spends more than five hours. Mobile phones are the preferred electronic device for most children, while tablets and laptops are the least preferred.

Moreover, most parents prefer using social media platforms while engaging with their children, whether it's during conversations, playtime, listening to music, or viewing photos. Specifically, the majority of parents indicated a preference for using YouTube as a social media platform with their children, with fewer opting for Instagram. Interestingly, when it comes to device ownership, many children don't have their own devices; instead, they utilize devices belonging to family members. The primary purpose of using electronic devices with children is predominantly for watching kids' shows.

These results underscore the prevalence of electronic device ownership within families and the varied usage patterns among children. The preference for mobile phones over tablets and laptops suggests a shift towards more compact and portable devices. Additionally, the reliance on family-owned devices highlights the shared nature of electronic device usage among children. Parents' preference for using social media platforms like YouTube during interactions with their children reflects the evolving landscape of digital engagement within families.

Caregivers' perspectives on the utilization of technology and social media for enhancing the vocabulary of preschool children.

What impact does technology and social media have on the vocabulary development of preschool children

The impact of technology and social media on preschool children's vocabulary development is multifaceted. Our study reveals that families, particularly parents, heavily incorporate electronic devices into their daily routines. These devices, including mobile phones, tablets, and laptops, serve as prominent tools for children's engagement with technology. While parents predominantly utilize social media platforms like YouTube and Instagram during interactions with their children, the effects of such interactions vary. Positive outcomes include the acquisition of new phrases and enhanced communication facilitated by exposure to various language stimuli. However, negative effects such as distraction, stress, and the adoption of unfamiliar language phrases are also observed. Interestingly, the study found a significant correlation between children's language proficiency and their ownership of

electronic devices, with those using their own devices demonstrating higher language levels [9,10].

Moreover, the number of siblings a child has correlates negatively with language level, suggesting a nuanced interplay between familial dynamics and language development. Despite these findings, no significant correlation was found between daily screen time and language proficiency. This contradicts previous literature and underscores the importance of age-specific developmental milestones in understanding technology's impact on cognitive behavior [9,10,11].

The study highlights the interconnectedness between social skills development and language proficiency, emphasizing the need for further exploration into how screen time influences social skills development. Additionally, insights into learning mechanisms suggest that electronic device use may supplement language acquisition, offering opportunities for word acquisition and linguistic development [10,11].

Practical implications include the necessity of monitoring children's electronic device usage, particularly in terms of time and content, by both parents and educators. Cultural variations in electronic device usage patterns also underscore the importance of understanding how technology influences parent-child communication within different contexts [9,10].

What are caregivers' perspectives on the utilization of technology and social media for enhancing the vocabulary of preschool children?

Caregivers' perspectives on the utilization of technology and social media for enhancing preschool children's vocabulary offer valuable insights into contemporary parenting practices. Our study reveals that caregivers predominantly view electronic devices and social media platforms as valuable tools for enriching children's vocabulary. Many parents prefer using these platforms during interactions with their children, incorporating them into various activities such as conversations, playtime, and sharing music or photos [9, 11,13].

Moreover, caregivers recognize the potential benefits of technology in facilitating language development, including the acquisition of new phrases and enhanced communication skills. They often report positive outcomes, such as their children acquiring specific terms related to

social media platforms and electronic devices. This indicates that caregivers perceive technology as a valuable resource for expanding children's vocabulary beyond traditional learning methods.

However, caregivers also acknowledge the potential drawbacks of excessive technology use, including distraction, stress, and the adoption of unfamiliar language phrases. Despite these concerns, many parents continue to utilize electronic devices and social media platforms as educational tools, particularly for accessing kid-friendly programming and diverse content [11,13, 15,16].

Overall, caregivers' perspectives underscore the complex interplay between technology use and language development in preschool children. While they recognize the benefits of technology for enhancing vocabulary, they also emphasize the importance of monitoring children's usage and balancing screen time with other activities to promote healthy development [11,15,16].

Conclusion

The results of this study unveil the intricate relationship between children's electronic device and social media usage and their language development. Both positive outcomes, such as enhanced communication, and negative effects, like distraction and stress, underscore the importance of maintaining a balanced perspective. Notably, children who use their own electronic devices exhibit higher language levels compared to those using family members' devices, suggesting a potential link between device ownership and language proficiency. Furthermore, the presence of siblings is negatively correlated with language level, indicating a need for further investigation into familial dynamics' impact on language development.

Contrary to previous assumptions, the findings of this study reveal no significant association between daily screen time and language proficiency. However, they emphasize the necessity of considering age-specific developmental milestones in understanding these relationships.

The results highlight the vital role of parental communication and word selection in shaping children's language acquisition. Continuous monitoring and guidance from parents and educators are essential to ensure positive outcomes in the digital age. Overall, these findings

underscore the need for a holistic approach to managing children's electronic device use to support their healthy growth and development.

Recommendations

- Future studies could benefit from a larger and more diverse sample of preschool children to improve the generalizability of the findings.
- Conducting longitudinal studies could provide insight into the long-term effects of technology and social media on vocabulary development in preschool children.
- Implementing controlled experiments or randomized controlled trials could help establish causal relationships between technology use, social media exposure, and vocabulary knowledge.
- Consider incorporating additional factors such as parental education, socioeconomic status, and access to educational resources into the study design to provide a more comprehensive understanding of preschool vocabulary development.
- Complement quantitative data with qualitative methods such as interviews or observations to gain deeper insights into the mechanisms through which technology and social media influence vocabulary knowledge in preschool children.
- Explore the development and effectiveness of educational interventions or programs aimed at promoting vocabulary development in preschool children, considering the role of technology and social media in these interventions.

Limitations

- The study may be limited by a small sample size, potentially impacting the generalizability of the findings to a broader population of preschool children.
- The sample may not be representative of the overall population of preschool children due to potential biases in participant selection or recruitment methods.
- The study may rely on self-reported data from parents or caregivers about their children's vocabulary knowledge, which could introduce bias or inaccuracies.
- The study may focus solely on technology and social media as factors influencing vocabulary knowledge, overlooking other potential contributors such as

socioeconomic status, parental education, or exposure to books and educational programs.

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