The Impact of Screen Usage on the Speech Development of Preschool Students at Barangay Francisco De Castro, GMA, Cavite

***Jenarah Kate A. Abuyen., Allysa Ellein S. Fauni., ZyndhieQ. Florendo., Jin D. Lim., Icee F. Saputil., Jan Jarrel B. Gillego.**

College of Nursing, Lyceum of the Philippines University Cavite, General Trias City, Philippines

***Corresponding Author**

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ABSTRACT

The rise of digital devices has made screen exposure common among young children, raising concerns about its effects on early speech development. Early language skills are essential for educational success. This study aims to examine the impact of screen usage on expressive language among preschoolers in Barangay Francisco De Castro, GMA, Cavite, in line with Sustainable Development Goal #4: Quality Education. Using a quantitative approach, data were collected through purposive sampling and a validated survey questionnaire employing a 4-point Likert scale to measure screen usage patterns and speech development indicators. The instrument demonstrated good reliability (Cronbach's Alpha: 0.878 for speech development, 0.846 for screen usage). Descriptive statistics and Spearman's rho correlation analyses were conducted to explore relationships between screen time variables and expressive language performance. Findings revealed that screen use does not hinder expressive language. Notably, the age at first screen exposure correlated significantly with speech development ($r = 0.253$, $p = 0.048$), indicating that earlier exposure may affect language acquisition. However, total screen time and content type showed no significant association with speech performance. The timing of initial screen exposure is a key factor influencing early speech development. Parents and educators should focus on delaying early screen introduction to promote optimal language growth in preschool children.

Keywords: Digital era, screen usage, speech development

INTRODUCTION

Early childhood is a vital stage for growth, especially during preschool, where play and social interaction shape a child's development. In the past, Filipino children engaged in outdoor street games that helped them learn, socialize, and build strong foundations without relying on technology. Today, digital media has replaced many of these activities, leading to increased screen time and reduced physical and social engagement. [1] Preschool years are crucial for brain development, and children build language and communication skills through interaction. They recommend that screen time for children aged 3 to 5 be limited to one hour per day of quality content [2]. Research presents mixed findings. [3] High screen use to emotional and attention issues, but not directly to language delay. [4] found both cognitive benefits and negative effects like delayed development and poor socialization. While excessive screen time can delay language development [5] - [6]. This study aims to explore the specific impact of early screen exposure on the speech development of preschool children in Barangay Francisco De Castro, GMA, Cavite. It supports UN Sustainable Development Goal 4.2, which promotes access to quality early education. By understanding screen time's effects, the study hopes to guide better educational practices and support healthier development in early childhood.

METHODOLOGY

The study utilized a quantitative research design to objectively measure and analyze the impact of screen usage on the speech development of preschool students in Barangay Francisco De Castro, GMA, Cavite. Using purposive sampling, the researchers selected 62 parents or primary caregivers from the 87 enrolled preschoolers

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based on specific criteria, including residency in the barangay, children aged 3 to 5 years old, regular screen exposure, and willingness to provide informed consent. Data were gathered through a researcher-made, expert-validated questionnaire consisting of twenty-eight closed-ended questions divided into four sections, which underwent a pilot test and yielded Cronbach's Alpha scores of 0.878 and 0.846 — both indicating good reliability. The research was conducted within the community setting of Barangay Francisco De Castro, which provided a diverse socio-economic background that helped capture varying patterns of screen usage among preschoolers.

The data collection process involved securing permissions from barangay officials, distributing and explaining informed consent forms, and administering the questionnaires personally to the parents. Completed forms were collected, tallied, and analyzed using statistical methods such as frequency and percentage distribution, mean, standard deviation, regression, hypothesis testing, and Spearman rho's correlation to determine relationships between variables and validate the study's hypotheses. Ethical considerations were strictly observed by ensuring confidentiality in accordance with the Data Privacy Act of 2012, guaranteeing fair respondent selection, and upholding beneficence by aiming to provide accurate and relevant findings that may benefit preschool children and their families within the community.

RESULTS

Table 1. Frequency Distribution of Responses in terms of the Initial Age of Screen Usage Exposure

Categories	**Frequency**	**Percentage (%)**
< 1 year old	8	12.9%
1 year old	13	21.0%
2 years old	17	27.4%
3 years old	16	25.8%
4 years old	8	12.9%
Total	**62**	**100%**

The study shows that children today are increasingly exposed to screens at very early ages, with many beginning device use during infancy or early toddler years. The table reflects this pattern, as the majority of preschool students in the study were first exposed to screens at age 2, followed by ages 3 and 1, with some even starting below 1 year old. This suggests that early screen exposure is common in the community, indicating that modern childhood now involves screen use beginning at an early age.

Table 2. Frequency Distribution of Responses in terms of their Average Screen Time in Hours

Categories	**Frequency**	**Percentage (%)**
1 hour	15	24.2%
2 hours	19	30.6%
3 hours	13	21.0%
> than 4 hours	15	24.2%
Total	**62**	**100%**

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Research shows that preschool-aged children are recommended to have limited screen time, generally ranging from 1 to 3 hours per day. The table reflects this pattern, as most preschool students in the study spend around 2 hours on screens, which aligns with the suggested range. However, it also shows that a notable portion of children spend more than 4 hours on screen, exceeding age-appropriate recommendations. This suggests that while some families follow recommended screen limits, many preschoolers still experience higher-than-advised daily screen exposure.

Table 3. Frequency Distribution of Responses in terms of their Consumed Content Type

Categories	**Frequency**	**Percentage (%)**
Educational		
Ms. Rachel	21	33.9%
Cocomelon	33	53.2%
Others	8	12.9%
Total	**62**	**100%**
Non-Educational		
Peppa Pig	14	22.6%
Cartoons	45	72.6%
Others	3	4.8%
Total	**62**	**100%**

Young children naturally focus toward animated and visually stimulating content, which often makes cartoons more appealing than live-action educational programs. The table reflects this pattern, as non-educational cartoons make up the largest portion of content viewed by preschoolers, while educational shows like Ms. Rachel and Cocomelon are watched less frequently. This suggests that despite the availability of educational material, preschool children still prefer highly animated entertainment, consistent with research showing their strong attraction to colorful characters and easily accessible cartoon content.

Table 4. Frequency Distribution of Responses in terms of Device Used

Categories	**Frequency**	**Percentage (%)**
Television	13	21.0%
Smartphone	33	53.2%
Laptop	1	1.6%
Tablet or Ipad	15	24.2%
Total	**62**	**100%**

The study shows that smartphones are the most accessible and commonly used digital devices among young children because of their portability, convenience, and wide range of entertainment features. The table reflects this pattern, as smartphones are the most frequently used device among preschool students, followed by tablets and televisions. This suggests that preschoolers in the community rely heavily on smartphones for screen use.

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Table 5. Frequency Distribution of Responses in terms of their Language Preference Device Used

Categories	**Frequency**	**Percentage (%)**
Tagalog	15	24.2%
English	47	75.8%
Total	**62**	**100%**

Research shows that English is the dominant language used across media platforms, making it the most accessible and widely encountered language for young children during screen use. The table reflects this pattern, as the majority of preschool students prefer English while using their devices, with only a smaller portion choosing Tagalog. This suggests that children in the community are more exposed to and influenced by English-language content.

Table 6. Overall Level of Speech Development of Preschool Students

Constructed Statements	**Mean**	**SD**	**Interpretation**
Ang bata ay nakakapagsalita ng lima hanggang dalawampung malinaw na salita maliban sa 'mama' at 'papa'. (The child can speak five to twenty clear words, excluding "mama" and "papa.")	3.5484	0.899	Highly Developed
Ginagamit ng bata ang mga panghalip tulad ng 'I', 'me', 'ako', o 'akin'. (The child uses pronouns such as "I," "me," "mine," or "my.")	3.6452	0.770	Highly Developed
Gumagamit ang bata ng dalawang hanggang tatlong salitang pandiwa at pangngalan na magkasama tulad ng "hingi gatas" o "suot ng damit". (The child uses two to three-word combinations of verbs and nouns, such as "ask [for] milk" or "wear clothes.")	3.4677	0.900	Developed
Nakakapagsalita ang bata ng tama sa gramatika gamit ang dalawang hanggang tatlong salitang pangungusap. (The child can speak grammatically correct two to three-word sentences.)	3.4194	0.820	Developed
Nagtatanong ang bata ng "ano?" (The child asks "what?")	3.5645	0.760	Highly Developed
Nagtatanong ang bata ng "bakit?" at "sino?" (The child asks "why?" and "who?")	3.5484	0.803	Highly Developed
Ang bata ay nakakabigkas ng mga salitang may mga titik a, e, i, o, u, m, p, b, n, t, d, k, g, h, w, s, l, r, tulad ng "susi", "gutom", "aral", "kaarawan", or "kagabi". (The child can pronounce words containing the letters (vowels and consonants) a, e, i, o, u, m, p, b, n, t, d, k, g, h, w, s, l, r, such as "key," "hungry," "study," "birthday," or "last night.")	3.4516	0.782	Developed
Grand Mean	0.5207	0.707	Highly Developed

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Note: 4.00-3.50 = Highly Developed, 3.49-2.50 = Developed, 2.49-1.50 = Needs Improvement, 1.49-1.00 = Severely Delayed

As shown on the table above, early speech development progresses through age-related milestones, with children gradually mastering vocabulary, sentence structure, and pronoun usage as they grow. The overall level of speech development among preschool students is rated "Highly Developed," indicating that most children demonstrate strong expressive language skills, appropriate pronoun usage, and the ability to ask complex questions. This suggests that, on average, the preschoolers in the study are meeting or exceeding expected speech milestones. However, areas such as sentence structure, grammatical accuracy, and articulation still show room for improvement, highlighting the ongoing need for interaction, exposure, and guidance to support comprehensive language development.

Table 7. Relationship Between Screen Usage and Speech Development Score in terms of Initial Age of Exposure

Relationship	**Correlation Coefficient** (ρ)	**Sig. (2-tailed)**	**Interpretation**
Initial Age vs. Speech Development Score	0.253	0.048	Significant

Research indicates that early screen exposure can interfere with the development of foundational speech skills. The table reflects this, showing a significant positive correlation between the initial age of screen exposure and speech development scores, suggesting that children who begin using screens at an older age tend to have higher speech development scores. This implies that delaying screen exposure allows preschoolers to engage in more language-rich interactions, which support the growth of vocabulary, sentence formation, and overall communication abilities.

Table 8. Relationship Between Screen Usage and Speech Development Score in terms of Screen Time Hours

Relationship	**Correlation Coefficient** (ρ)	**Sig. (2-tailed)**	**Interpretation**
Screen Time in Hours vs. Speech Development Score	0.050	0.0679	Not Significant

Note: P (T <= t) two tail > 0.05 - Not Significant; P (T <= t) two tail < 0.05 - Significant

Prolonged screen time can limit opportunities for children to engage in active conversations and practice their speech skills. The table reflects this, showing a negative correlation between the number of hours spent on screens and speech development scores, although the relationship is not statistically significant. This suggests that while screen time alone may not directly determine speech outcomes, excessive use could still reduce interactions that support the development of vocabulary, sentence formation, and overall communication abilities.

Table 9. Relationship Between Screen Usage and Speech Development Score in terms of the Type of Screen Content

Relationship	**Correlation Coefficient** (ρ)	**Sig. (2-tailed)**	**Interpretation**
Educational Content vs. Speech Development Score	0.065	0.0615	Not Significant
Non-educational Content vs. Speech Development Score	0.167	0.195	Not Significant
Educational vs. Non-educational Content	-0.066	0.612	Not Significant

Note: P (T <= t) two tail > 0.05 - Not Significant; P (T <= t) two tail < 0.05 - Significant

The study suggests that the type of content viewed on screens may not directly determine speech development outcomes in preschool children. The table reflects this pattern, showing no significant correlation between the type of content—educational or non-educational—and speech development scores. This indicates that whether children watch educational programs or entertainment content does not appear to have a measurable impact on their overall speech abilities, suggesting that other factors, such as interaction, practice, and engagement, may play a more important role in supporting language development.

Table 10. Relationship Between Screen Usage and Speech Development Score in terms of the Device Used

Relationship	**Correlation Coefficient** (ρ)	**Sig. (2-tailed)**	**Interpretation**
Device Used vs. Speech Development Score	-0.122	0.344	Not Significant

Note: P (T <= t) two tail > 0.05 - Not Significant; P (T <= t) two tail < 0.05 - Significant

This indicates that the type of device used for screen activities may not directly determine speech development outcomes in preschool children. The table reflects this, showing a negative but not statistically significant correlation between the device used and speech development scores. This suggests that whether children use smartphones, tablets, televisions, or laptops does not appear to have a measurable impact on their speech abilities, indicating that other factors such as interaction quality and engagement may play a more important role in supporting language development.

Table 11. Relationship Between Screen Usage and Speech Development Score in terms of Language Preference during Screen Usage

Relationship	**Correlation Coefficient** (ρ)	**Sig. (2-tailed)**	**Interpretation**
Language Preference vs. Speech Development Score	-0.072	0.576	Not Significant

Note: P (T <= t) two tail > 0.05 - Not Significant; P (T <= t) two tail < 0.05 - Significant

The study suggests that the language used during screen activities may not directly determine speech development in preschool children. The table reflects this, showing a negative but not statistically significant correlation between language preference and speech development scores. This indicates that whether children prefer English or Tagalog while using devices does not appear to have a measurable impact on their overall speech abilities, suggesting that other factors, such as interaction, practice, and exposure, are more influential in supporting language development.

Table 12. Overall Relationship Between Screen Usage Score and Speech Development Score\

Relationship	**Correlation Coefficient** (ρ)	**Sig. (2-tailed)**	**Interpretation**
Screen Usage Score vs. Speech Development Score	0.389	0.002	Significant

Note: P (T <= t) two tail > 0.05 - Not Significant; P (T <= t) two tail < 0.05 - Significant

Research indicates that screen usage can influence speech development depending on how it is used. The table reflects this pattern, showing a significant positive correlation between overall screen usage and speech development scores. This suggests that increased screen use is associated with higher speech development

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among preschool students, indicating that, when appropriately engaged, screen activities may support the growth of vocabulary, sentence formation, and overall communication skills.

Table 13. Spearman Rho's Correlation Between Speech Development Score and a Specific Screen Usage Question

Constructed Statements	**Correlation Coefficient** (ρ)	**Sig. (2-tailed)**	**Interpretation**
Ang labis na oras ng paggamit ng screen ay maaaring makaapekto sa dalas ng pagsasalita ng bata. (Excessive screen time may affect the frequency of the child's speech.)	-0.296	0.020	Significant
Ang bata ay nakakuha ng bagong bokabularyo dahil sa panonood ng screen. (The child acquired new vocabulary due to screen viewing.)	0.426	0.001	Significant
Ang kakayahan ng bata na makipag-usap nang harapan ay bumuti sa kabila ng pagkakalantad sa screen. (The child's ability to communicate face-to-face improved despite screen exposure.)	0.475	0.000	Significant
Ang oras ng panonood mula sa screen ay nakatulong sa kakayahan ng bata na ipahayag ang sarili sa pamamagitan ng mga salita. (Screen viewing time helped the child's ability to express themselves through words.)	0.473	0.000	Significant

Note: P (T <= t) two tail > 0.05 - Not Significant; P (T <= t) two tail < 0.05 - Significant

Screen usage can have both positive and negative effects on different aspects of speech development, depending on how it is used. The table reflects this, showing that certain specific aspects of speech, such as vocabulary acquisition, communication skills, and verbal self-expression, are positively associated with screen use, while other aspects, like overall speech ability, may be negatively impacted by increased screen time. This suggests that screen usage can support some areas of language development when engaged appropriately, but excessive or unstructured use may hinder other aspects of a child's speech growth.

DISCUSSION

The analysis of preschool children in Barangay Francisco De Castro, GMA, Cavite found that age of first screen exposure was the only screen-related variable significantly associated with speech development, with older age of introduction corresponding to higher expressive language scores. This aligns with global pediatric recommendations advocating delayed screen use in early childhood and supports prior work emphasizing the importance of early human interaction for language acquisition. However, these results differ from studies suggesting that total screen duration is a primary predictor of delayed speech, as the data showed no significant association between total viewing time and speech outcomes.

While the nature of content (educational vs. non-educational), device type, and daily viewing duration were not significantly correlated with speech development, the overall screen usage score showed a positive association

with expressive language ability. This suggests that certain aspects of screen use as possibly interactive features or exposure to diverse vocabulary may contribute positively to speech skills when used in moderation. This stands in contrast to common assumptions and some prior studies claiming that screen media uniformly hinders speech development. Despite generally non-significant correlations involving screen duration, one questionnaire item revealed a negative association between excessive screen time and frequency of speech, indicating that overuse may still limit opportunities for natural communication. This duality mirrors recent debates on whether screen media is inherently harmful or simply dependent on context and parental mediation. These results should be interpreted with caution. As a cross-sectional study relying on parent-reported screen habits, the researchers cannot fully rule out recall bias or parental overestimation or underestimation of screen time, nor can they establish causality. Additionally, variations in home environment, parent–child interaction quality, and socioeconomic differences were not controlled and may influence the outcomes.

While the researchers believe these limitations do not compromise the primary findings, future studies could incorporate observational methods, stratify results by co-viewing frequency, and include developmental assessments over time to clarify whether screen usage supports or impedes expressive language growth. Longitudinal designs and expanded demographic variables would further strengthen the understanding of how digital exposure interacts with early childhood speech development.

CONCLUSION

This study explored the impact of screen usage on the speech development of preschool students in Barangay Francisco De Castro, GMA, Cavite. Findings revealed that most children began using screens between the ages of 2 and 3, with smartphones and animated content as the dominant media forms. While children spent an average of two hours daily on screens, only the age at first exposure significantly predicted speech development outcomes. Neither total screen time nor whether content was labeled “educational” had a meaningful correlation with speech development.

Overall, preschool students demonstrated relatively strong expressive language abilities, particularly in pronoun use and asking “what,” “why,” and “who” questions. However, areas such as multi-word sentence construction and articulation showed room for improvement. The findings suggest that moderate screen exposure is not inherently detrimental, but early, unsupervised screen use may limit essential parent–child interactions that support speech development. Furthermore, the quality and interactivity of media content are more influential than simple content categories.

REFERENCES

1. Archana, S. (2022). Significance of English language on media in the globalized world. International Journal of Multidisciplinary Innovative Research, 2(1), 15–19. https://ijmir.org/doc/Vol-2-No-1-2022/Paper%202_Archana_English_15-19_Significance%20of%20English%20Language.pdf
2. Aziz, Z. W., Aljammas, E. K., & Al-Allaf, L. I. K. (2023). Impact of screen exposure on language development among toddlers and preschoolers in Nineveh province. Military Medical Science Letters, 92(3), 259–271. https://doi.org/10.31482/mmsl.2022.048
3. Barrer, S. (2022, February 17). What's the appropriate screentime for toddlers? Hello Doctor. https://hellodoctor.com.ph/parenting/toddler-preschooler/screentime-toddlers/
4. Bhutani, P., Gupta, M., Bajaj, G., Deka, R. C., Satapathy, S. S., & Ray, S. K. (2023). Is the screen time duration affecting children’s language development? - A scoping review. Clinical Epidemiology and Global Health, 25, Article 101457. https://doi.org/10.1016/j.cegh.2023.101457
5. Bunag, L. (2021, June 17). Effects of screen time on child brain development. Hello Doctor. https://hellodoctor.com.ph/parenting/child-health/behavioral-and-developmental-disorders/effects-screen-time-child-brain-development/
6. Carandang, C. M. (2022, June 17). Children and screen time: Is my child having too much? Medgate Philippines Inc. https://medgate.ph/2021/11/22/children-and-screen-time-is-my-child-having-too-much/
7. Dy, A. B. C., & Santos, S. K. (2023, June 28). Measuring effects of screen time on the development of children in the Philippines: A cross-sectional study. BMC Public Health, 23, Article 1251. https://doi.org/10.1186/s12889-023-16188-4

8. Johnson, A. (2022, March 9). Screen time recommendations by age. All About Vision. https://www.allaboutvision.com/conditions/myopia/screen-time-by-age/
9. Karani, N. F., Sher, J., & Mophosho, M. (2022). The influence of screen time on children's language development: A scoping review. The South African Journal of Communication Disorders, 69(1), Article 825. https://doi.org/10.4102/sajcd.v69i1.825
10. Lin, H., Chenn, K., Chou, W., Yuan, K., Yen, S., Chen, Y., & Chow, J. (2020). Prolonged touch screen device usage is associated with emotional and behavioral problems, but not language delay, in toddlers. Infant Behavior and Development, 58, Article 101424. https://doi.org/10.1016/j.infbeh.2020.101424
11. Madigan, S., McArthur, B. A., Anhorn, C., Eirich, R., & Christakis, D. A. (2020). Associations between screen use and child language skills. JAMA Pediatrics, 174(7), 665–673. https://doi.org/10.1001/jamapediatrics.2020.0327
12. Malesińska, K. (2023, March 15). How English became the world's most spoken language? Novakid Blog. https://www.novakidschool.com/blog/english-why-this-widely-spoken-language-is-a-global-language/
13. Massaroni, V., Donne, V. D., Marra, C., Arcangeli, V., & Chieffo, D. P. R. (2023). The relationship between language and technology: How screen time affects language development in early life—A systematic review. Brain Sciences, 14(1), 27. https://doi.org/10.3390/brainsci14010027
14. Morris, A. J., Filippetti, M. L., & Rigato, S. (2022). The impact of parents' smartphone use on language development in young children. Child Development Perspectives, 16(2), 103–109. https://doi.org/10.1111/cdep.12449
15. Muppalla, S. K., Vuppalapati, S., Pulliahgaru, A. R., & Sreenivasulu, H. (2023). Effects of excessive screen time on child development: An updated review and strategies for management. Cureus, 15(6), Article e40608. https://doi.org/10.7759/cureus.40608
16. Nadeem, R. (2024, April 14). Parenting children in the age of screens. Pew Research Center. https://www.pewresearch.org/internet/2020/07/28/parenting-children-in-the-age-of-screens/
17. Ribner, A. D., Barr, R. F., & Nichols, D. L. (2020). Background media use is negatively related to language and literacy skills: Indirect effects of self-regulation. Pediatric Research, 89(6), 1523–1529. https://doi.org/10.1038/s41390-020-1004-5
18. Rowe, S. (2021, July 31). How do smartphones affect childhood psychology? Psych Central. https://psychcentral.com/lib/how-do-smartphones-affect-childhood-psychology
19. Setiani, D. (2020). Effect of gadget usage on the social development of children aged 3-5 years: Literature review. STRADA Jurnal Ilmiah Kesehatan, 9(2), 1732–1739. https://doi.org/10.30994/sjik.v9i2.526
20. Shivakumar, S., & Sivaraman, V. (2022). Early gadget exposure among young children and its association with cognitive and socio-emotional development. Journal of the Indian Academy of Applied Psychology, 48(2), 241–248. https://www.researchgate.net/publication/363857331
21. Snyder, M. N., & Mares, M. (2020). Preschoolers' choices of television characters as sources of information: Effects of character type, format, and topic domain. Journal of Experimental Child Psychology, 203, Article 105034. https://doi.org/10.1016/j.jecp.2020.105034
22. Yalçin, S. S., Tezol, Ö., Çaylan, N., Nergiz, M. E., Yildiz, D., Çiçek, Ş., & Oflu, A. (2021). Evaluation of problematic screen exposure in pre-schoolers using a unique tool called "seven-in-seven screen exposure questionnaire": Cross-sectional study. BMC Pediatrics, 21(1), Article 456. https://doi.org/10.1186/s12887-021-02939-y