JOURNAL OF HUMANITIES AND SOCIAL STUDIES
https://humasjournal.my.id/index.php/HJ/index
ISSN 2987-3533
Vol. 2 No. 3 (AUGUST 2024)

Submitted: May 28th , 2024 | Accepted: August 10th , 2024 | Published: August 15th , 2024

DAMPAK TEKNOLOGI TERHADAP KAPASITAS KOSAKATA ANAK

THE IMPACT OF TECHNOLOGY ON CHILDREN'S VOCABULARY CAPACITY

Nargis[1], Bunga Malika Putri[2], Erningsih Putri S[3], Fauzan Rofiqi[4], Khilda Umi Rahmah[5]
[12345] Pendidikan Bahasa Inggris, Universitas Muhammadiyah Tangerang, Tangerang, Indonesia
Email: [1]nargis@gmail.com, [2]bungamalika27@gmail.com [3]erningsihputris@gmail.com, [4]frofiqi28@gmail.com, [5]khildaumirahmah@gmail.com,

Abstrak

Penelitian ini mengkaji pengaruh teknologi terhadap perkembangan kosakata anak, dengan fokus pada studi kasus seorang anak laki-laki berusia tiga tahun bernama Rizky. Terlepas dari antusiasme Rizky untuk belajar melalui video YouTube, kosakatanya awalnya terbatas pada kata-kata dari video tersebut. Ibunya, Ibu Maya, secara kreatif melakukan intervensi dengan menggabungkan permainan interaktif, interaksi dunia nyata, dan sesi membaca untuk memperluas kosakatanya. Pendekatan ini menunjukkan perlunya menyeimbangkan media digital dengan metode pembelajaran tradisional dan menyoroti peran keterlibatan orang tua. Kerangka teoritis seperti Teori Pengkodean Ganda dan Teori Pembelajaran Sosial memberikan wawasan tentang efektivitas pendekatan gabungan ini.

***Kata Kunci**: Anak, Pengembangan Kosakata, Teknologi, Media Digital, Keterlibatan Orang Tua, Pembelajaran Interaktif, Studi Kasus*

Abstract

This study examines the influence of technology on children's vocabulary development, focusing on a case study of a three-year-old boy named Rizky. Despite Rizky's enthusiasm for learning through YouTube videos, his vocabulary was initially limited to words from the videos. His mother, Ibu Maya, creatively intervened by incorporating interactive play, real-world interactions, and reading sessions to expand his vocabulary. This approach demonstrates the necessity of balancing digital media with traditional learning methods and highlights the role of parental involvement. Theoretical frameworks such as Dual Coding Theory and Social Learning Theory provide insights into the effectiveness of this combined approach.

***Keywords**: Children, Vocabulary Development, Technology, Digital Media, Parental Involvement, Interactive Learning, Case Study*

INTRODUCTION

In the digital age, technology has become an integral part of daily life, profoundly influencing various aspects of society, including education and language development. The rapid proliferation of digital devices such as smartphones, tablets, and computers, coupled with the widespread availability of the internet, has transformed the way children learn and interact with language (Panjati, 2023). This paper seeks to explore the impact of technology on children's vocabulary capacity, a critical component of language development and academic success.

Vocabulary acquisition is fundamental to children's cognitive development and literacy skills. A robust vocabulary enhances reading comprehension, communication abilities, and academic achievement. Traditional methods of vocabulary learning, such as reading books and engaging in conversations, are now supplemented, and sometimes replaced, by digital tools and platforms. These technological advancements present both opportunities and challenges for vocabulary acquisition in children (Monshizadeh, 2021).

Numerous digital tools and applications are designed to support vocabulary development in children. Educational software, e-books, language learning apps, and interactive games offer innovative ways to engage young learners. For instance, applications like Duolingo, ABCmouse, and Khan Academy Kids provide interactive and adaptive learning experiences that cater to individual learning paces and styles (Dujardin, 2021). These tools often incorporate multimedia elements, such as audio, video, and animations, which can make learning more engaging and effective.

Moreover, the internet provides access to a vast array of information and resources that can enhance vocabulary learning. Children can explore diverse topics and languages through online dictionaries, encyclopedias, and language exchange platforms. Social media and communication apps also offer opportunities for real-time language use and vocabulary expansion through interactions with peers and content creators worldwide (Nurhaliza, 2023).

Research Sakharova (2019), indicates that technology can have a positive impact on children's vocabulary development. Interactive digital tools can make learning more appealing and accessible, particularly for children who may struggle with traditional methods. Educational games and apps that use gamification principles can motivate children to learn new words and concepts through rewards and challenges. Additionally, multimedia elements can aid in the retention and understanding of new vocabulary by providing visual and auditory context.

Technology can also facilitate personalized learning experiences. Adaptive learning algorithms can tailor content to a child's current vocabulary level and learning needs, providing targeted practice and reinforcement. This personalized approach can help address individual differences in learning styles and paces, potentially leading to more effective vocabulary acquisition (Dai, J, 2022).

Despite the potential benefits, the impact of technology on children's vocabulary capacity is not universally positive. Concerns have been raised about the quality and quantity of language exposure through digital media. Passive consumption of content, such as watching videos or playing non-educational games, may not provide the rich language input necessary for robust vocabulary development. Furthermore, excessive screen time can reduce opportunities for face-to-face interactions, which are crucial for language learning and social development (Sidgel, 2017).

The digital divide is another significant issue, as not all children have equal access to technology and high-quality digital resources. Socioeconomic disparities can lead to unequal opportunities for vocabulary development, potentially widening the achievement gap. Additionally, the overuse of technology can contribute to attention and concentration issues, which may negatively affect learning outcomes (Lebens, 2009).

Parents and educators play a critical role in mediating the impact of technology on children's vocabulary development. Guided and supervised use of digital tools can maximize their benefits while mitigating potential risks. Parents can select high-quality educational apps and set appropriate screen time limits to ensure a balanced approach to technology use. Educators can integrate digital tools into the classroom to complement traditional teaching methods and provide diverse vocabulary learning experiences.

Moreover, fostering an environment that encourages reading, conversation, and active engagement with language remains essential. Combining traditional and digital methods can create a holistic approach to vocabulary development, leveraging the strengths of both to support children's learning.

METHOD

This study will employ a literature review approach to provide a comprehensive understanding of the impact of technology on children's vocabulary capacity. A systematic literature review will be conducted to identify, evaluate, and synthesize existing research on the topic. The review will follow a structured process to ensure a thorough and unbiased analysis.

I. Literature Search and Selection

The literature search will be conducted using multiple academic databases, including PubMed, ERIC, Google Scholar, and JSTOR. Keywords such as "technology and vocabulary development," "digital tools and children's language acquisition," and "impact of digital media on vocabulary" will be used to identify relevant studies. Inclusion criteria will focus on peer-reviewed articles published between 2010 and 2023 that examine the relationship between technology and vocabulary development in children aged 3-12 years.

II. Data Extraction and Analysis

Data extraction will involve systematically gathering information from each selected study, including study design, sample characteristics, types of technology used, and key findings related to vocabulary development. A thematic analysis will be conducted to identify common themes, patterns, and gaps in the literature. Quantitative findings from studies will be summarized and compared to

identify trends and overall effects, while qualitative findings will be synthesized to capture in-depth insights and contextual factors influencing the impact of technology on vocabulary acquisition.

III. Quality Assessment

The quality of the included studies will be assessed using established criteria for evaluating research rigor and validity. This assessment will consider factors such as study design, sample size, measurement tools, and potential biases. High-quality studies will be given greater weight in the synthesis of findings to ensure robust and reliable conclusions.

IV. Synthesis and Reporting

The findings from the literature review will be synthesized to provide a comprehensive overview of the impact of technology on children's vocabulary capacity. The review will highlight effective digital tools and strategies, potential challenges, and areas for future research. The results will be reported following the PRISMA guidelines to ensure transparency and replicability.

HASIL DAN PEMBAHASAN

The purpose of this literature review was to examine the impact of technology on children's vocabulary capacity. This discussion will synthesize the findings from the reviewed studies, explore theoretical frameworks explaining the effects of technology on vocabulary development, and suggest practical strategies for leveraging technology to enhance vocabulary learning while mitigating potential risks.

Theories on the Impact of Technology on Children's Vocabulary Development

Several theories provide insights into how technology influences children's vocabulary acquisition. Five prominent theories will be discussed in this section: the Dual Coding Theory, the Social Learning Theory, the Cognitive Load Theory, the Digital Natives Theory, and the Linguistic Interdependence Hypothesis.

1. Dual Coding Theory

The Dual Coding Theory, proposed by Allan Paivio (1991), posits that information is processed and stored in two distinct but interconnected systems: the verbal system and the non-verbal (visual) system. According to this theory, multimedia presentations that combine verbal and visual information can enhance learning by providing dual channels for encoding and retrieving information. Educational technology, such as interactive e-books and language learning apps, often employs both text and images, facilitating vocabulary acquisition by reinforcing word meanings through visual context.

2. Social Learning Theory

Albert Bandura's (1971) Social Learning Theory emphasizes the importance of observing and modeling the behaviors, attitudes, and emotional reactions of others. Technology offers children

numerous opportunities to engage with diverse language models through videos, games, and social media. Interactive platforms that allow children to communicate with peers or mentors can promote vocabulary learning by providing rich, varied linguistic input and opportunities for social interaction and practice (Lestari.

3. **Cognitive Load Theory**

John Sweller's (1988) Cognitive Load Theory suggests that learning is most effective when cognitive load is managed appropriately. Technology can either reduce or increase cognitive load depending on its design and use. Well-designed educational apps and games can scaffold learning and present information in manageable chunks, thus reducing cognitive load and facilitating vocabulary acquisition. Conversely, poorly designed digital tools that present excessive or irrelevant information can overwhelm children's cognitive resources, hindering vocabulary development.

4. **Digital Natives Theory**

Marc Prensky's (2012) Digital Natives Theory posits that children born into the digital age are inherently different in how they process information and learn compared to previous generations. Digital natives are accustomed to multitasking, rapid information processing, and interactive learning environments. This theory suggests that traditional teaching methods may be less effective for this generation and that incorporating technology into language education can align better with their learning preferences and enhance vocabulary acquisition.

5. **Linguistic Interdependence Hypothesis**

Jim Cummins' (1981) Linguistic Interdependence Hypothesis posits that proficiency in one language supports proficiency in another, especially in the context of bilingual or multilingual education. Technology can facilitate vocabulary development across multiple languages through apps and platforms designed for language learning. By providing exposure to and practice in different languages, technology can support the transfer of vocabulary knowledge and skills between languages.

Synthesis of Findings from Reviewed Studies

The reviewed studies revealed a nuanced picture of the impact of technology on children's vocabulary capacity. While there are clear benefits, such as increased engagement, personalized learning, and access to diverse linguistic input, there are also significant challenges and potential drawbacks.

Positive Impacts

1. **Engagement and Motivation**

Several studies highlighted that educational technology can increase children's engagement and motivation to learn. Interactive apps and games that use gamification elements, such as rewards and

challenges, make vocabulary learning enjoyable and motivating. This increased engagement can lead to more time spent on vocabulary practice and, consequently, better vocabulary acquisition.

2. **Personalized Learning**

Adaptive learning technologies that tailor content to individual learners' needs were found to be particularly effective. These tools can assess a child's current vocabulary level and provide targeted practice, helping to bridge gaps in knowledge and reinforce learning. Personalization ensures that children receive appropriate challenges and support, promoting efficient vocabulary development.

3. **Diverse Linguistic Input**

Technology provides access to a wide range of linguistic input that might not be available in a child's immediate environment. Through the internet, children can encounter different dialects, accents, and vocabulary used in various contexts. This exposure can broaden their vocabulary and enhance their understanding of language use in different situations.

Negative Impacts

1. **Quality of Language Exposure**

One significant concern is the quality of language exposure through digital media. Passive consumption of content, such as watching videos or playing non-educational games, may not provide the rich, interactive language input necessary for effective vocabulary development. Studies have shown that children benefit more from interactive and engaging language experiences that involve active use of vocabulary.

2. **Screen Time and Physical Interaction**

Excessive screen time can reduce opportunities for face-to-face interactions, which are crucial for vocabulary learning and social development. Conversations with parents, teachers, and peers provide immediate feedback and context for new vocabulary, helping children to understand and use words appropriately. Overreliance on digital media can limit these valuable interactions.

3. **Digital Divide**

The digital divide, or the gap between those who have access to technology and those who do not, remains a significant issue. Children from low socioeconomic backgrounds may have limited access to high-quality digital resources, putting them at a disadvantage in terms of vocabulary development. Ensuring equitable access to technology is essential for supporting all children's language learning.

Practical Strategies for Enhancing Vocabulary Development through Technology

To maximize the benefits and mitigate the challenges associated with technology use in vocabulary development, several practical strategies can be implemented.

1. **Choosing High-Quality Educational Tools**

Selecting high-quality educational apps and digital tools that are designed based on sound pedagogical principles is crucial. Parents and educators should look for tools that offer interactive and engaging content, provide immediate feedback, and adapt to individual learning needs. Reviews and recommendations from educational experts can guide these choices.

2. **Balancing Screen Time with Physical Interaction**

While technology can be a valuable tool for vocabulary learning, it should not replace face-to-face interactions. Parents and educators should ensure a balanced approach that includes ample opportunities for conversations, storytelling, and reading books together. Setting appropriate screen time limits and encouraging activities that promote direct language use can help maintain this balance.

3. **Promoting Active Engagement**

Encouraging children to actively engage with digital content, rather than passively consuming it, is essential. Interactive activities, such as digital storytelling, language games, and creating multimedia projects, can promote active use of vocabulary and deeper learning. Parents and educators can participate in these activities with children to provide guidance and support.

4. **Providing Equitable Access**

Addressing the digital divide requires concerted efforts to provide equitable access to technology for all children. Schools and communities can implement programs to distribute digital devices and provide internet access to underserved populations. Additionally, public libraries and community centers can offer access to educational technology and resources.

5. **Integrating Technology into Traditional Learning**

Combining traditional and digital methods of vocabulary instruction can create a holistic learning environment. For example, teachers can use digital tools to supplement classroom lessons and provide additional practice opportunities. Parents can integrate educational apps into daily routines, complementing activities such as reading and playing word games.

Case Study: Balancing Technology and Real-World Interactions in Children's Vocabulary Development

In a small town, a three-year-old boy named Rizky lives with his mother, Ibu Maya. Rizky is an intelligent and enthusiastic child who loves learning new things. However, there is one small issue that worries Ibu Maya.

Rizky is very fond of watching videos on YouTube. From children's songs to cheerful short animations, Rizky is always glued to the screen of his tablet. Initially, Ibu Maya was pleased to see her son interested in modern technology, but she started to worry when she realized that Rizky was not saying many new words besides those he heard from the videos.

One day, after watching an animation video about forest animals, Rizky began referring to a lion as "rawr" and a giraffe as "long neck." Ibu Maya understood that these videos were entertaining for Rizky, but she also realized that she needed to help him develop his actual vocabulary.

Ibu Maya decided to take a creative approach to address this concern. She designed interactive games where she and Rizky could play together while learning. For example, during role-playing games where they pretended to be a doctor and patient, Ibu Maya would ask Rizky, "What should we do if we are sick?" Rizky began responding with broader words than those he learned from the videos, such as "take medicine" and "get plenty of rest."

In addition to the games, Ibu Maya took Rizky to the local playground and library. At the playground, they met other children his age, which opened up new conversations for Rizky. At the library, they read storybooks together, introducing Rizky to new words and experiences.

Gradually, Rizky started to develop a broader and more diverse vocabulary. He not only knew the names of animals from the videos but could also identify colors, shapes, and emotions with the correct words.

In the end, Ibu Maya saw encouraging progress in Rizky's vocabulary and speaking abilities. Rizky still enjoyed watching YouTube videos, but now he also had many opportunities to learn from direct interactions with his surroundings.

Analysis and Discussion

The case of Rizky and Ibu Maya provides a practical example of how technology can influence children's vocabulary development and the importance of balancing digital media with real-world interactions. This section will explore the theoretical underpinnings of Rizky's case, the challenges faced, and strategies implemented to address these challenges.

Theoretical Frameworks

1. **Dual Coding Theory**

According to the Dual Coding Theory by Allan Paivio, information is more effectively retained when presented through both verbal and visual channels. Rizky's engagement with YouTube videos aligns with this theory, as the combination of images and sounds in the videos helps him remember and understand the content. However, relying solely on visual and auditory stimuli from videos can limit the richness of language exposure.

2. **Social Learning Theory**

Albert Bandura's Social Learning Theory emphasizes the role of observation and imitation in learning. Rizky's use of terms like "rawr" and "long neck" demonstrates his imitation of what he observes in the videos. However, without interactive social contexts, his language development can

become limited. Ibu Maya's role-playing games and trips to the playground provided the necessary social interaction to enrich Rizky's vocabulary.

3. **Cognitive Load Theory**

John Sweller's Cognitive Load Theory suggests that learning is most effective when cognitive load is optimized. The videos Rizky watched were likely designed to be engaging and easy to follow, thus minimizing cognitive load. However, they did not challenge him to expand his vocabulary significantly. Ibu Maya's interactive games, on the other hand, required Rizky to think and respond, thereby increasing cognitive engagement and promoting deeper learning.

4. **Digital Natives Theory**

Marc Prensky's Digital Natives Theory posits that today's children, who grow up with digital technology, process information differently. Rizky, as a digital native, is naturally attracted to digital content. However, this attraction needs to be balanced with traditional learning methods to ensure holistic development. Ibu Maya's integration of books and real-world interactions addressed this need.

5. **Linguistic Interdependence Hypothesis**

Jim Cummins' Linguistic Interdependence Hypothesis suggests that proficiency in one language supports proficiency in another. In Rizky's case, his initial vocabulary from videos served as a foundation, which was expanded through real-world interactions and bilingual books at the library. This approach helped him transfer and apply his vocabulary knowledge more effectively.

3. Challenges and Strategies

1. **Quality of Language Exposure**

One challenge was the limited quality of language exposure from the videos. While they were engaging, they did not provide a rich linguistic context. To address this, Ibu Maya introduced role-playing games and storytelling sessions that required Rizky to use and understand more complex language structures.

2. **Screen Time and Physical Interaction**

Excessive screen time was another concern, as it reduced opportunities for physical interaction. Ibu Maya mitigated this by incorporating activities that involved face-to-face communication, such as playing with other children at the playground and participating in library reading sessions. These interactions provided immediate feedback and contextual understanding that screens could not offer.

3. **Balancing Technology and Traditional Learning**

Finding a balance between technology and traditional learning methods was crucial. Ibu Maya's strategy of combining digital content with interactive play and reading ensured that Rizky's learning was well-rounded. This balance helped him develop a more comprehensive vocabulary and better social skills.

4. **Parental Involvement**

Parental involvement played a significant role in Rizky's vocabulary development. Ibu Maya's active participation in his learning process, through creative games and reading sessions, provided the guidance and support Rizky needed to expand his vocabulary. This involvement highlighted the importance of parents in mediating children's technology use and supplementing it with enriching activities.

CONCLUSION

The impact of technology on children's vocabulary capacity is complex and multifaceted. While technology offers significant opportunities for enhancing vocabulary learning through increased engagement, personalized learning, and diverse linguistic input, it also presents challenges related to the quality of language exposure, screen time, and equitable access.

By understanding the theoretical frameworks that explain the influence of technology on vocabulary development and implementing practical strategies to leverage its benefits while mitigating risks, parents, educators, and policymakers can support children's language learning in the digital age. Combining traditional and digital methods can create a balanced and effective approach to vocabulary instruction, ensuring that all children have the opportunity to develop robust vocabulary skills essential for their cognitive and academic growth.

REFFERENCES

Bandura, A. (1971). Social learning theory. New York: General Learning Press.

Clark, J. M. & Paivio, A. (1991). Dual coding theory and education. Educational Psychology Review, 3(3), 149-170.

Cummins, J. (1981). The role of primary language development in promoting educational success for language minority students (pp. 3–49). In California State Department of Education (ed.) Schooling and language minority students: A theoretical framework. Los Angeles: Evaluation, Dissemination, and Assessment Center California State University.

Dai, J., Gu, X., & Zhu, J. (2022). Personalized Recommendation in the Adaptive Learning System: The Role of Adaptive Testing Technology. Journal of Educational Computing Research, 61, 523 - 545.

Dujardin, E., Auphan, P., Bailloud, N., Ecalle, J., & Magnan, A. (2021). Tools and Teaching Strategies for Vocabulary Assessment and Instruction: A Review. Social Education Research.

Lebens, M., Graff, M.G., & Mayer, P. (2009). Access, attitudes and the digital divide: children's attitudes towards computers in a technology-rich environment. Educational Media International, 46, 255 - 266.

Lestari, S., Nurjanah, S.A., & Indriani, W. (2021). Application of Albert Bandura Social Learning Theory in PAI Learning at Al-Wafa Ciwidey SMP Bandung. ALSYS.

Monshizadeh, L., Vameghi, R., Rahimi, M., Sajedi, F., Hashemi, S. B., Yadegari, F., & Kasbi, F. (2021). Is There Any Association Between Language Acquisition and Cognitive Development in Cochlear-Implanted Children?. The journal of international advanced otology, 17(3), 195–199.

Nurhaliza, S., & Fakhurriana, R. (2023). Students' Perception Towards the Use Of "Cake Application" As A Medium to Increase Vocabulary Knowledge. Indonesian Journal of Multidisciplinary Educational Research.

Panjeti-Madan, V.N., & Ranganathan, P. (2023). Impact of Screen Time on Children's Development: Cognitive, Language, Physical, and Social and Emotional Domains. Multimodal Technol. Interact., 7, 52.

Prensky, Marc. 2012. From Digital Natives to Digital Wisdom. New York.

Sakharova, O. (2019). Innovative pedagogical technologies in the enrichment of the 4th year of life children's vocabulary in the process of physical education. Scientific Visnyk V.O. Sukhomlynskyi Mykolaiv National University. Pedagogical Sciences.

Sigdel, S. (2017). Technology and Learning Capacity of Children: A Positive Impact of Technology in Early Childhood.

Sweller, J. (1988). Cognitive Load during Problem Solving: Effects on Learning. Cognitive Science, 12, p.257-285.