IJEE
Indonesian Journal of English Education

CHILDREN'S INTERACTION WITH AI TECHNOLOGY AND ITS IMPACT ON LANGUAGE ACQUISITION IN THE DIGITALIZATION ERA

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Received: November 2025; Revised: November 2025; Accepted: December 2025

ABSTRACT

Technological development, particularly Artificial Intelligence (AI), has influenced education and children's language development. AI is increasingly integrated into educational platforms such as YouTube Kids and Lingo Kids, providing interactive language input and real-time feedback. Traditionally, language acquisition relied on direct social interaction; however, children today also interact with non-human agents such as AI. Although AI offers learning support, it cannot replace human interaction, which provides essential social and emotional contexts. Moreover, increased screen time may pose risks to children's language development. This study examines children's interaction with AI-based technology and its impact on language development in the digital era. The research was conducted at CBC Mawaddah Warrahmah Kindergarten and Early Childhood Education institution in Jambi Province. Approximately 15 children participated as the main subjects, with parents involved as informants. Using a qualitative approach, data were collected through observations and interviews. The findings show that children have interacted with AI-based technology from as early as one to four years old, making AI a familiar part of their daily lives. These interactions influence several aspects of English language development, including phonology, lexicon, syntax, and pragmatics, shaped by stimulus, response, and reinforcement during interaction with AI-based technology.

Keywords: children's interaction with ai; artificial intelligence (AI); children's language acquisition; digitalization era; language acquisition in the digital era

ABSTRAK

Perkembangan teknologi, khususnya Kecerdasan Buatan (Artificial Intelligence/AI), telah memengaruhi dunia pendidikan dan perkembangan bahasa anak. AI semakin terintegrasi dalam berbagai platform pendidikan seperti YouTube Kids dan Lingo Kids, yang menyediakan input bahasa interaktif serta umpan balik secara langsung. Secara tradisional, pemerolehan bahasa bergantung pada interaksi sosial langsung; namun, saat ini anak-anak juga berinteraksi dengan agen non-manusia seperti AI. Meskipun AI menawarkan dukungan pembelajaran, teknologi ini tidak dapat menggantikan interaksi manusia yang kaya akan konteks sosial dan emosional. Selain itu, peningkatan waktu penggunaan layar berpotensi menimbulkan risiko terhadap perkembangan bahasa anak. Penelitian ini mengkaji interaksi anak dengan teknologi berbasis AI serta dampaknya terhadap perkembangan bahasa di era digital. Penelitian dilakukan di Taman Kanak-Kanak dan Pendidikan Anak Usia Dini CBC Mawaddah Warrahmah di Provinsi Jambi. Sekitar 15 anak terlibat sebagai subjek utama penelitian, dengan orang tua berperan sebagai informan. Dengan menggunakan pendekatan kualitatif, data dikumpulkan melalui observasi dan wawancara. Hasil penelitian menunjukkan bahwa anak-anak telah berinteraksi dengan teknologi berbasis AI sejak usia satu hingga empat tahun, sehingga AI menjadi bagian yang familiar dalam kehidupan sehari-hari mereka. Interaksi tersebut memengaruhi beberapa aspek perkembangan bahasa Inggris, termasuk fonologi, leksikon, sintaksis, dan pragmatik, yang dibentuk melalui stimulus, respons, dan penguatan selama interaksi dengan teknologi berbasis AI.

Kata Kunci: *interaksi anak dengan ai; kecerdasan buatan (AI); pemerolahan bahasa anak; era digitalisasi; pemerolehan bahasa di era digital*

How to Cite:
Fahkrunisa, L., Sulistiawati, I., & M, R. (2025). Children's Interaction with AI Technology and Its Impact on Language Acquisition in the Digitalization Era. *IJEE (Indonesian Journal of English Education), 12*(2), 239–248. https://doi.org/10.15408/ijee.v12i2.48878

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IJEE (Indonesian Journal of English Education), 12 (2), 2025
P-ISSN: 2356-1777, E-ISSN: 2443-0390 | DOI: https://doi.org/10.15408/ijee.v12i2.48878

INTRODUCTION

Technological advancement in the current era of globalization and digitalization is experiencing rapid and significant growth. This substantial development provides ease for all sectors of society worldwide to readily access technology. This sophistication has transformed various aspects of life, particularly in the realm of education and child development. One technological innovation that is now receiving widespread attention is Artificial Intelligence (AI), which has been integrated into numerous educational applications and platforms for children.

According to Fahkrunisa (2022), due to the increasing technological development, the level of education has also changed in line with these technological shifts. One form of this progressive change brought about by technology is in language development and learning. In the context of modern education, the technological advancement marked by the presence of AI plays a distinct role in shaping children's English language acquisition and learning. Educational AI tools frequently used by children include YouTube Kids, Chatbots, Duolingo Kids, Lingo Kids, and others, many of which specifically focus on exposure to English. Consequently, the current phenomenon presents a fascinating question for further research: What is the impact of a child's interaction with AI-based technology on the English language acquisition process.

Language acquisition is a complex process involving cognitive, social, and emotional interaction. According to Fahkrunisa (2023), language itself is a tool used for communication and a means to express the speaker's identity, expressions, and emotions. Therefore, good language use is reflected in how the speaker acquires that language. Traditionally, as Tomasello (2005) suggests, children acquire language through direct interaction with their social environment, especially with parents, caregivers, teachers, and peers.

In the context of English as a Second Language (ESL) or Foreign Language (EFL) for young learners, AI interaction aligns closely with key theories of Second Language Acquisition (SLA). According to Krashen (1985) suggests that language is acquired through exposure to comprehensible input (i+1). AI applications like Lingo Kids excel at delivering highly personalized and adaptive input, ensuring that vocabulary and grammar challenges are constantly adjusted to the child's competence level. Furthermore, the Interaction Hypothesis (Long, 1985) emphasizes the role of negotiation of meaning and corrective feedback in making input comprehensible. AI tools, particularly those featuring dialogue systems, can mimic this negotiation by prompting the child for clarification or providing instant, targeted feedback on English grammar and pronunciation, transforming passive learning into an active dialogue. Thus, AI's strength lies in its ability to support both the cognitive (input) and interactional aspects of L2 acquisition.

However, with the arrival of AI technology, this form of interaction has undergone a significant transformation. Children now interact not only with humans but also with non-human entities capable of responding to speech, providing feedback, and adjusting learning materials according to the child's abilities in real-time. AI offers the advantage of providing a personalized and adaptive learning experience. Sophisticated AI systems can recognize a child's speech patterns, offer corrections, and present material tailored to their level of understanding. Apps like Duolingo Kids and Lingo Kids use machine learning algorithms to dynamically adjust content, creating an interactive and enjoyable learning experience. Kory-Westlund and Breazeal (2019), in their long-term study, showed that social robots were able to build stable emotional bonds with preschool children and improve their language skills through dialogue-based games

However, interacting with AI certainly presents specific challenges. One main issue is the quality of the interaction offered by AI compared to human interaction. Human interaction still holds the advantage in terms of pragmatics, intonation, social context, and emotional nuance. Tamis-LeMonda et al. (2014) emphasize that parental responsiveness in verbal interaction significantly contributes to language acquisition. Nonetheless, the effectiveness of AI in supporting language development is highly dependent on how it's used. Therefore, the role of parents and educators

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is vital in guiding children. They act not only as supervisors but also as facilitators in creating a balanced learning experience between technology and social interaction. A recent study by Jones et al. (2022) indicates that the collaboration between AI-based interaction and adult supervision can significantly boost the effectiveness of language learning.

AI also presents opportunities in cross-cultural learning contexts. In research by Nguyen et al. (2022), AI applications were used to support migrant children in learning a new language in a foreign environment, thereby accelerating social and cultural integration. Thus, AI acts not just as a tool but also as a cultural bridge in the context of globalized education. However, the implementation of AI technology must also consider ethical and regulatory aspects. UNESCO (2021) highlights the importance of policies governing the use of AI in education, particularly concerning child data protection, digital security, and the principle of inclusivity

Given the complexity and impact of AI use in children's language acquisition, a multidisciplinary study is essential. This research needs to cover linguistic, developmental psychology, educational, information technology, and ethical aspects. This comprehensive approach is crucial for understanding the mechanisms of children's interaction with AI and its consequences for language development, both from the linguistic and socio-pragmatic perspectives.

For the purpose of *this specific research*, the study will investigate the impact of AI usage (YouTube Kids/ Lingo Kids/ BING/ legal website from the institution) on children's language development. Specifically, the research will focus on the child's language development within the linguistic aspects.

METHODS

Research design

This research was qualitative research which used the observation and interviewed as the data gathered. The qualitative design, specifically the case study method, was selected to facilitate an in-depth, holistic understanding of the complex phenomenon under investigation: the interaction of early childhood with AI technology and its subsequent impact on their language development. This study was conducted with early childhood students in Kindergarten Class A at the CBC Mawaddah Warrahmah institution in Jambi Province. The research utilized data collection techniques involving observation and in-depth interviews with both the parents/guardians and the class teachers. A case study is particularly suitable as it allows for the investigation of this phenomenon within its real-life context—a single classroom group within one early childhood institution—thereby enabling a detailed exploration of the nuances, processes, and meaning-making from the participants' perspectives (i.e., teachers and parents) (Stake, 1995). This methodology prioritizes rich description over statistical generalization, which is crucial for answering the research question regarding the *nature* of the impact of AI exposure. The children observed were all from the same class, totalling around 15 students. The research process began with the initial observation of the children. This observation took place during the digital literacy class held by the CBC Mawaddah Warrahmah institution in Jambi Province. The purpose of this observation was to determine the extent to which AI technology affects children's language development. Following the observation, the researcher conducted separate interviews with the class teacher and the parents/guardians. This was done to see the correlation between the children's interaction with AI technology and its impact on their language development, viewed from both the teacher's and the parent's perspectives."

Research site and participants

This study was conducted at the CBC Mawaddah Warrahmah institution in Jambi Province. The research population focused on early childhood students in Kindergarten Class A. The total number of observed participants from this specific class was 15 students. Additionally, the

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researcher conducted separate interviews with the class teacher and the parents/guardians to determine the relevance of the observations that were gathered

Data collection and analysis

Data collection was carried out using several primary techniques:

1. Observation

   Observation serves as a core method for gathering data in qualitative research. As a data collection technique, it typically involves directly and systematically examining the research subjects (or objects) to capture their actions and context. The researcher conducted observations (a combination of participatory and non-participatory) during the children's digital literacy classes. The primary focus of this observation was to capture first-hand data on the children's actual interaction patterns with AI-integrated devices and to document the observable effects on their linguistic aspects (phonology, lexicon, and syntax) immediately before, during, and after AI exposure.

2. Interview

   According to Burhan Bungin M, et al (2006), the data collection technique using the interview method typically involves a limited sample. This means there is no rigid number specified for determining the sample size. If the researcher feels that the required data has been met or is sufficient, they do not need to seek additional samples.

   This method usually allows the researcher to obtain detailed reasoning behind the respondents' answers, often covering their opinions, motivations, values, or experiences.

   The interviews conducted for this study will involve a total of five parents/guardians and one class teacher. The specific interview questions will be developed in alignment with the research topic: AI and children's language development.

The interviews conducted for this study will involve a total of five parents/guardians and one class teacher. The interviews will be conducted directly and face-to-face with the respondents. The specific interview format used is the structured interview, utilizing a set list of 30 predetermined questions developed in alignment with the research topic: AI and children's language development**.**

After the data is collected, it will be analysed using B.F. Skinner's Behaviourism theory. Following this analysis, the researcher will further examine the linguistic aspects that emerge from the data.

FINDINGS AND DISCUSSION

Findings

Based on the observations conducted, it was found that the children's interaction with AI technology was quite prolonged. The types of AI frequently utilized by the early childhood students at the CBC Mawaddah Warrahmah institution include YouTube Kids, LingoKids, BING, and the institution's own CERDAS (*Cermat, Rajin, dan Asyik*) application. The interaction between the children and the AI technology is evident in how the children imitate the vocabulary and intonation they receive from the AI. The vocabulary imitated by the children is predominantly new vocabulary, significantly featuring foreign language terms, primarily English, alongside Indonesian words.

These new words uttered by the children are a form of word repetition acquired through their interaction with the AI technology. This phenomenon is a direct manifestation of the Input Hypothesis in Second Language Acquisition (SLA), where comprehensible input from the AI leads to early language production. Following are some new vocabulary repetitions frequently used by the children during the observation:

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Table 1. List of Children's New Vocabulary Repetitions

No.	New Vocabulary	Child's Response	Language Acquisition Analysis
1	Dung dung / Fiuh	The child imitates the sound of an object seen during the video playback.	Indicates a stage of phonological imitation, where the child mimics sounds as an early form of language. These sounds are still primarily onomatopoeic.
2	Rwaaaar / Kwek Kwek	The child responds when asked a question related to animal sounds.	Indicates the ability to associate meaning with sound symbols (animal sound → word). This response also signifies cognitive engagement.
3	Putri malu malu malu (Sensitive plant shy shy shy)	The child responds when presented with a question related to the image of a sensitive plant (*putri malu*).	The child uses word repetition (reduplication) as a strategy for vocabulary acquisition. This is common in the early stages of language development.
4	White	The child responds by using a foreign language when watching the video.	Shows bilingual exposure, where the child is able to grasp foreign vocabulary from multimedia stimuli. This is an early sign of receptive bilingualism.
5	No no / Monyong monyong (Pouting/ Pucker up)	The child imitates the phrase along with a hand gesture when something negative occurs.	The combination of verbal + non-verbal cues indicates pragmatic ability: understanding the function of language (and gestures) to reject or express disapproval.

The results of the observations conducted when the children were given stimuli, specifically questions based on the AI video shown during the digital literacy activity, indicated that **several** children displayed notably different socio-emotional dimensions. According to Satia Utami (2023), socio-emotional development during a child's golden age (0-6 years) is closely related to the sensitivity required to understand something during an interaction.

During the observation, it was noted that some children exhibited socio-emotional responses such as enthusiasm and positive expressions toward the AI video presented by the facilitator. Furthermore, when examining the table above (Table 1), it is evident that children who interact with AI technology unconsciously frequently articulate and repeat words to express emotions and concepts they are not yet able to explain logically or scientifically.

Subsequently, the data obtained from the interviews conducted with the informants is presented as follows:

Table 2. Child Language Development with AI Interaction Based on Interview Results

Aspect	B.F. Skinner's Theory (Behaviorism)	Findings in the Data
Mechanism of Language Acquisition	Language is learned through the stimulus–response–reinforcement chain. The child imitates utterances heard, which are then strengthened by praise or correction.	Children imitate words from AI-based platforms like YouTube Kids, CERDAS, and Lingo Kids, such as "transportasi" (transportation), "purple," "here we go," "tap tap tap," and "apate." The immediate imitation of these English terms serves as an early behavioral response (imitation) to the L2 input.
Role of Environment	The environment provides positive reinforcement (praise, repetition) and negative reinforcement (reprimands for inappropriate words).	The teacher reprimands the child for using inappropriate words like "anjir," and parents limit screen time (30–60 minutes). This parental/teacher intervention acts as L1 or L2 reinforcement/ correction mechanism.
Vocabulary Development	Vocabulary emerges from repetition of stimuli → new words enter the lexicon because they are frequently heard.	Children learn new words, including English vocabulary ("transportasi," colors [purple, orange], names of objects) and simple English sentences heard while interacting with LingoKids, such as "Let's find it out," although with imperfect pronunciation (early L2 phonological production). *However*, the children also acquired new vocabulary with nonsensical meaning, such as "balerina kapucina, bombardilo krokodilo."

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P-ISSN: 2356-1777, E-ISSN: 2443-0390 | DOI: https://doi.org/10.15408/ijee.v12i2.48878

Aspect	B.F. Skinner's Theory (Behaviorism)	Findings in the Data
Negative Language	The child imitates offensive words due to uncontrolled stimuli; teacher/parental correction suppresses the behavior.	Children are not yet capable of filtering meaning, so they unconsciously engage in phonological imitation without comprehension. The words that frequently appear and are used by the children are "anjir" and "anjay" without knowing their meaning. This lack of filtering also applies to the meaning of L2 words.
Two-Way Interaction	The child's response to a verbal stimulus → a form of conditioning.	Children build interaction with the AI and unconsciously often answer the questions posed by the AI. For example, the child responds to English-based questions from Bing ("Where are you going today?"). This demonstrates early L2 output (response) triggered by AI input, aligning with the Interaction Hypothesis (Long, 1985).

The data presented in the tables above clearly identifies a pattern that accelerates children's English language development (ELA) in the digital era, specifically stemming from their interaction with AI. This interaction includes content from YouTube Kids, Bing, and educational games like LingoKids and the CERDAS application used at the CBC Mawaddah Warrahmah institution in Jambi Province.

Based on this data, it's evident that the mechanism of children's English language development occurs through a sequence of processes: stimulus, response, and reinforcement (S-R-R), **which strongly** supports B.F. Skinner's Behaviorist view as applied to L2 learning. These three mechanisms, or stages of language acquisition, collectively shape a behavior that subsequently influences the child's language development and learning. Therefore, it can be concluded that the use of AI-based technology—such as YouTube Kids, LingoKids, Bing, and CERDAS—serves as a form of linguistic stimulus, particularly L2 input, that can trigger the emergence of new language in children. However, the ultimate quality of this stimulus is dependent on the guidance provided by teachers and parents.

Discussion

Analysis of Children's Interaction with AI Technology

Language serves as a vital foundation essential for a child's cognitive and social development. According to Indah (2021), children possess unique characteristics that vary with their age, fundamentally experiencing a "golden age" between one and six years old. This range is dubbed the golden age because the child's brain is undergoing a period of rapid development. Language is one of the key areas that flourishes during this critical period. Hoff (2014) asserts that an individual's language ability begins in the first year of life (age 0) and continues to show significant progress until the primary school years.

Generally, language development in children aged 4–6 years exhibits greater complexity compared to previous stages. This complexity is observed through a significant increase in new vocabulary, the ability to construct sentences with more accurate grammar, and improved storytelling skills. However, children in this age range typically have not yet fully grasped the complete meaning of the words or sentences they use. This study specifically focuses on the language development of early childhood students aged 4–6 years at the CBC Mawaddah Warrahmah institution in Jambi Province.

Early Exposure and AI as Linguistic Stimulus

Through the conducted observation and interviews, it was established that children at CBC Mawaddah Warrahmah, Jambi Province, are nearly all daily users of AI. Interaction with AI-based technology was initially introduced by their parents and reinforced by the digital

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literacy curriculum at the institution. Interview data confirms this, with several parents stating that their children had been interacting with AI for several years before entering kindergarten

Based on the data interview, suggests that AI and AI-based devices are not a novel concept for these children. On average, children were introduced to AI-based technology between the ages of one and four years old. Furthermore, based on interviews with the teacher and observations from the digital literacy class, children are exposed to AI-based technology early on, either through educational viewing on YouTube Kids or learning via the CERDAS application.

Language Acquisition Mechanism: The S-R-R Model

In line with the above interpretation, children were indeed interacting with AI-based technology at home prior to its introduction in the classroom. The results of the children's interaction with AI elicit several patterns in their language acquisition process, which are strongly supported by B.F. Skinner's Behaviorism theory. According to Skinner (1957), language is acquired through the mechanism of stimulus, response, and reinforcement (S-R-R), where children generally tend to imitate the language of an individual or something they observe. Children learn language not because of an innate ability, but because of conditioning from the environment. In this context, AI technology such as YouTube Kids, Bing, LingoKids, and the CERDAS computer application acts as a powerful source of linguistic stimulus for these young children.

Interview results show that when children watch educational programs, they hear new vocabulary such as "transportasi" or English colour words like "purple" and "orange." This acts as a stimulus which then prompts a response in the form of word repetition or sentence imitation. Children actively mimic the words or phrases they hear, even if in some cases they do not yet understand the meaning, such as when they utter "apate" from the word *apartment*. This phenomenon aligns with Skinner's view that early language acquisition is largely based on phonological imitation.

Based on observation and interviews, the children's response to the linguistic stimulus in developing vocabulary primarily occurs through phonological imitation (sound mimicry), repetition, meaning association, and the use of gestures. Furthermore, the nature of the response to this stimulus can be positive or negative, such as praise or a smile, which serves to reinforce the child's behavior in using that language.

The interaction findings strongly indicate that AI serves as a potent source of English as a Second Language (ESL) input, directly influencing the children's early English Language Acquisition (ELA). The observation that children successfully imitate foreign words like "white," "purple," and phrases like "here we go" and "Let's find it out" confirms the immediate impact of AI on their English lexicon and early syntax. This mechanism aligns perfectly with Krashen's Input Hypothesis (1985), where the AI acts as a responsive environment providing comprehensible input (i+1) through repetitive and contextualized visual and auditory stimuli (e.g., LingoKids and YouTube Kids content). Furthermore, the children's ability to engage in two-way responses with AI, such as answering questions from Bing, demonstrates an active output mechanism which supports the Interaction Hypothesis (Long, 1985). The use of simple English phrases like "no no" accompanied by gestures highlights the development of L2 pragmatics, where English language elements are immediately integrated into functional communication and socio-emotional expression, reinforcing the idea that AI exposure accelerates the internalization of the English language code alongside their native dialect.

The Role of Onomatopoeia and Reduplication

This process aligns with the stages of language development described by linguists. As seen in Table 1 (provided previously), the children engage in phonological imitation (sounds) to mimic

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the natural sounds of objects they are trying to interpret. Sounds like "dung dung" and "rwaaar" are examples of phonological imitation, commonly known as onomatopoeia.

Onomatopoeia—words whose sound imitates a natural sound or real-world object sound (like animal or object noises)—offers a direct link between sound and meaning, making it easier for children to associate the word with a real object or phenomenon. Motamedi (2021) notes that children often use onomatopoeia in their early language production, and these words typically appear earlier in their vocabulary than other general words. This is evident when the child says "dung-dung" to interpret the sound of a drum and "rwaaar" when interpreting a tiger.

Additionally, the children employ word repetition and behavioral mimicry in their language acquisition process. The repetition of the word "Malu" (shy) in *Putri Malu* (Sensitive Plant) demonstrates a component of linguistic reduplication often used to strengthen the memory of new vocabulary. Interview data confirms that children frequently imitate and repeat the intonation, gestures, and speaking style of the AI (Bing) they use. This supports Clark's (2009) theory, which states that repetition is a primary mechanism children use to internalize acquired language.

Pragmatics and Code-Switching

Children also absorb foreign vocabulary, such as "white," demonstrating the potential for early bilingualism through exposure to AI-based media. Sander-Montan's (2023) research suggests that language variation can help accelerate and broaden a child's vocabulary understanding, provided the variation is consistent and repetitive. Meanwhile, the use of "no no" accompanied by a gesture shows pragmatic understanding: using language (and non-verbal cues) to express rejection. Giberga A, et al. (2025) note that prosody and gestures assist children in comprehending more complex communicative intent.

This is consistent with Skinner's theory, which explains that language is learned through the stimulus–response–reinforcement mechanism. A child hears a sound/word (stimulus), attempts to imitate it (response), and then receives reinforcement from the environment (praise, correction, or repetition by adults) (1957).

Impact of Children's Interaction with AI on Language Development

Based on the data analysis, children's interaction with AI has had an impact across several aspects of their language development:

Positive Impacts

- **Phonological Aspect:** Children imitate sounds and voices from AI content, such as "dung dung" or "rwaaaar." This is a form of phonological imitation which is the initial stage of language acquisition (Amalia & Wardhani, 2019).
- **Lexical (Vocabulary) Aspect:** AI enriches the child's vocabulary, both in Indonesian ("transportasi") and foreign languages ("white"). Positive reinforcement from teachers/parents accelerates the internalization of this vocabulary.
- **Syntactic Aspect:** Interview data indicates that children imitate not only words but also more complex sentence patterns. For example, a child mimicked the dialogue style from Bing: "Hai A, kamu mau kemana? Apakah kita akan pergi hari ini?" This ability to generate new sentences aligns with Chomsky's (1959) critique of behaviorism, suggesting an underlying Language Acquisition Device (LAD) at work.
- **Pragmatic Aspect:** Children learn to adjust language to context. Observation shows children use the phrase "no no" accompanied by a hand gesture to reject something, indicating the development of pragmatic skills. Furthermore, interviews revealed that children use formal

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language when interacting with the AI but code-switch back to the Jambi dialect when speaking with peers. This demonstrates an ability to switch language styles according to the social context (Vygotsky, 1978).

Negative Impact

Although AI enriches vocabulary, there is a risk of children absorbing inappropriate language. The teacher reported that a child once imitated the offensive word "*anjir*" from a YouTube Kids show. From a behaviorist perspective, this occurs because the linguistic stimulus is uncontrolled and negative reinforcement is not yet consistent. If not properly guided, negative vocabulary can become ingrained in the child's linguistic behavior. Arifin's (2020) research emphasizes that adult supervision is crucial for effective operant conditioning in guiding children's language acquisition.

CONCLUSIONS AND SUGGESTION

Based on the analysis above, it can be concluded that children's interaction with AI presents a dual effect:

Positive Impact: Enriches vocabulary, introduces foreign languages, improves phonological, syntactic, and pragmatic skills, and fosters intrinsic motivation for language learning.

Negative Impact: Potential for absorbing offensive or inappropriate language if adequate parental and teacher supervision is absent.

Thus, Skinner's behaviourism theory effectively explains how children acquire language through the stimulus provided by AI and the reinforcement received from their environment.

Acknowledgments

This research was made possible through the generous support and collaboration of several key institutions and individuals. We extend our deepest gratitude to the Ministry of Higher Education, Science, and Technology (KEMENDIKTISANINTEK) for providing the crucial research grant funding that enabled the successful execution of this entire study.

We are also profoundly thankful to Baiturrahim University—specifically the Rector, Vice-Rector, the Institute for Research and Community Service (LPPM), and all departments—for their institutional support, provision of facilities, and the ethical clearance necessary to conduct our work.

Finally, our sincere appreciation goes out to every member of the research team. Your dedication, hard work, collaborative spirit, and valuable intellectual contributions, from the initial planning stages through to the final report, were instrumental to achieving the objectives of this study.

REFERENCES

Arifin, Z. (2020). Application of B. F. Skinner's operant conditioning in early childhood language development. *Journal of Early Childhood Education Research, 9*(1), 22–34.

Amalia, D., & Wardhani, N. (2019). The implementation of Skinner's behaviorism theory in English language teaching. *Journal of English Education and Teaching, 3*(3), 357–365.

Clark, E. V. (2009). *First language acquisition* (2nd ed.). Cambridge University Press.

Bungin, B. M. (2006). *Teknik praktis riset komunikasi kuantitatif dan kualitatif* (2nd ed.). Kencana.

Chomsky, N. (1959). Review of Skinner's *Verbal behavior*. *Language, 35*(1), 26–58.

Fahkrunisa, L. (2022). The effectiveness of flashcard vocabulary in learning language (English and Japanese) to enhance speaking skill for beginners. *Journal of Curriculum and Pedagogic Studies (JCPS), 1*(1).

Fahkrunisa, L. (2023). Pengenalan pentingnya berbahasa Inggris pada anak tunanetra di sekolah luar biasa. *Journal of Disability Studies and Research (JDSR), 2*(2), 12–23.

Giberga, A., et al. (2025). Prosody and gesture help pragmatic processing in children with developmental and language disorder. *Journal of Communication Disorders*.

*Corresponding author

IJEE (Indonesian Journal of English Education), 12 (2), 2025
P-ISSN: 2356-1777, E-ISSN: 2443-0390 | DOI: https://doi.org/10.15408/ijee.v12i2.48878

Hoff, E. (2014). *Language development* (5th ed.). Wadsworth.

Lestari, I. (2021). Perkembangan bahasa pada anak usia 3–4 tahun. *Jurnal Kualita Pendidikan, 2*(2).

Jones, A., Black, R., & Wang, J. (2022). Teacher-guided versus AI-guided language learning in early childhood: A comparative study. *Computers & Education, 179*, Article 104421.

Krashen, S. D. (1985). *The input hypothesis: Issues and implications*. Laredo Publishing Company.

Kory-Westlund, J. M., & Breazeal, C. (2019). A long-term study of young children's rapport, social emulation, and language learning with a peer-like robot playmate in preschool. *Frontiers in Robotics and AI, 6*, Article 81.

Long, M. H. (1985). Input and second language acquisition theory. In S. Gass & C. Madden (Eds.), *Input in second language acquisition* (pp. 377–393). Newbury House.

Luo, R., & Tamis-LeMonda, C. S. (2017). Early autonomy and its role in language development. In *The Wiley handbook of early childhood development programs, practices, and policies*. Wiley.

Madigan, S., et al. (2020). Association between screen time and children's performance on a developmental screening test. *JAMA Pediatrics, 174*(3), 244–250.

McReynolds, E., et al. (2017). Toys that listen: A study of parents, children, and internet-connected toys. In *Proceedings of the ACM Conference* (pp. 1–10). ACM.

Motamedia, Y., et al. (2021). Linking language to sensory experience: Onomatopoeia in early language development. *Journal of Child Language, 24*(3).

Montenegro, J. L. Z., da Costa, C. A., & da Rosa Righi, R. (2019). Survey of conversational agents in health care: Challenges and opportunities. *Journal of Medical Systems, 43*(7), Article 204.

Nguyen, T., Lee, J., & Kim, J. (2022). AI-supported language learning for migrant children: A case study in multilingual environments. *Language Learning & Technology, 26*(2), 132–150.

Sander-Montan, A., et al. (2023). The more they hear the more they learn? Using data from bilinguals to test models of early lexical development. *Cognition*, Article 238.

Utama, S., & Wahyuni, D. (2023). Emosional anak terhadap perkembangan bahasa pada anak usia dini. *Ulil Albab: Jurnal Ilmiah Multidisiplin, 3*(1).

Skinner, B. F. (1957). *Verbal behavior*. Appleton-Century-Crofts.

Tomasello, M. (2005). *Constructing a language: A usage-based theory of language acquisition*. Harvard University Press.

Tamis-LeMonda, C. S., Kuchirko, Y., & Song, L. (2014). Why is infant language learning facilitated by parental responsiveness? *Current Directions in Psychological Science, 23*(2), 121–126.

UNESCO. (2021). *AI and education: Guidance for policy-makers*. United Nations Educational, Scientific and Cultural Organization.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.

Zhou, L., Yang, H., Chen, Z., & Xu, L. (2021). Artificial intelligence in early childhood education: A systematic review. *International Journal of Child-Computer Interaction, 30*, Article 100313.

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IJEE (Indonesian Journal of English Education), 12 (2), 2025
P-ISSN: 2356-1777, E-ISSN: 2443-0390 | DOI: https://doi.org/10.15408/ijee.v12i2.48878