

UTILIZING FLASHCARDS TO IDENTIFY ENGLISH PHONOLOGICAL ERRORS AMONG STUDENTS WITH INTELLECTUAL DISABILITIES

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Abstract

Education is a right for every individual. For students with mental disorders, teaching English poses a unique challenge that requires teachers to find effective teaching media for vocabulary instruction. This study aims to identify phonological errors of students with intellectual disabilities in learning vocabulary and explore how to teach vocabulary to students with intellectual disabilities using flashcards. The research employs a qualitative approach with descriptive analysis, involving observation and auditory analysis to identify four voice recordings from students with different intellectual disabilities. The results reveal that students who experienced ADHD and communication disorder showed good engagement during the learning process, but encountered pronunciation errors. Meanwhile, students with autism and slow learning experienced difficulties in both participating in learning activities and pronunciation. These difficulties are caused by intellectual disabilities affecting their socialization abilities and leading to learning delays. Based on these findings, it can be said that the use of flashcards is effective as a vocabulary-learning medium for students with mild mental disorders. However, for students with more severe mental disorders, a more authentic approach is required such as involving the use of real-life objects, situational learning, multisensory activities, or task-based learning that connects vocabulary with students' daily experiences and environments. By engaging students in more meaningful and contextualized learning, educators can provide better support tailored to their specific cognitive and communicative needs.

Keywords: flashcard; intellectual disabilities; phonological errors; teaching vocabulary; student engagement

Abstrak

Pendidikan merupakan hak setiap individu. Bagi siswa dengan gangguan mental, pengajaran bahasa Inggris merupakan tantangan tersendiri yang mengharuskan guru untuk menemukan media pengajaran yang efektif untuk pengajaran kosakata. Penelitian ini bertujuan untuk mengidentifikasi kesalahan fonologis siswa dengan retardasi mental dalam mempelajari kosakata dan mengeksplorasi cara mengajarkan kosakata kepada siswa dengan retardasi mental menggunakan kartu flash. Penelitian ini menggunakan pendekatan kualitatif dengan analisis deskriptif, yang melibatkan observasi dan penggunaan metode analisis audii untuk mengidentifikasi empat rekaman suara dari siswa dengan gangguan mental yang berbeda. Hasil penelitian menunjukkan bahwa siswa yang memiliki masalah mental berupa ADHD dan masalah dalam berbicara menunjukkan keterlibatan yang baik selama proses pembelajaran tetapi mengalami kesalahan pengucapan. Sementara itu, siswa dengan gangguan autisme dan keterlambatan belajar mengalami kesulitan dalam berpartisipasi dalam kegiatan pembelajaran dan pengucapan. Kesulitan ini disebabkan oleh retardasi mental yang memengaruhi kemampuan sosialisasi mereka dan menyebabkan keterlambatan belajar. Berdasarkan temuan ini, dapat disimpulkan bahwa penggunaan kartu flash efektif sebagai media pembelajaran kosakata bagi siswa dengan gangguan mental ringan. Namun, bagi siswa dengan gangguan mental yang lebih berat, diperlukan pendekatan yang lebih autentik. Hal ini penting bagi pendidik untuk memahami kondisi siswa dalam menentukan media pengajaran yang tepat.

Kata Kunci: flashcard; keterbelakangan mental; kesalahan fonologis; pengajaran kosakata; keterlibatan siswa

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INTRODUCTION

Education is a fundamental right for all students, including those with mental disorders (Dibra, 2014; Zendeli, 2017). However, these students often require specialized educational approaches tailored to their unique needs, as they face challenges in social interactions and academic achievement. Teaching strategies, particularly in English vocabulary, are crucial for enhancing their communication skills and boosting their confidence. Prameswari & Akhriyah (2023) state, one promising tool in this context is the use of flashcards, which provide visual stimuli that engage students and facilitate learning. This method not only aids in vocabulary retention but also makes learning enjoyable and accessible for students with cognitive limitations. Therefore, it is essential to explore innovative strategies like flashcards to improve educational outcomes for these learners.

Research indicates that providing education for students with intellectual disabilities should involve unique and comprehensive strategies. Baharun & Awwaliyah (2018) highlight the importance of inclusive education, which allows these students to learn alongside their peers while requiring instructors to adapt their teaching methods. Oktapyanto (2016) emphasizes the need for tailored instructional strategies that foster social skills and cognitive development. Furthermore, Bayu Prasetyo & Rahmasari (2016) underscore the significance of an emotionally supportive educational environment, which encourages motivation and engagement. Such support is essential for building confidence and enthusiasm among students. Thus, recognizing the diverse needs of these learners is vital for developing effective teaching practices.

This research offers both practical and theoretical benefits that can significantly impact the field of special education. Practically, educators can utilize flashcards to create engaging and visually stimulating learning experiences that capture the attention of students with intellectual disabilities. Recent studies support the effectiveness of flashcards in enhancing classroom engagement. Wijaya and Marlina (2023) found that flashcards promote student participation and focus due to their visual appeal and interactive use. Moreover, Putri et al. (2022) emphasize that the repetitive and tangible nature of flashcards helps sustain learners' interest and encourages active involvement during lessons. These findings suggest that flashcards are not only beneficial for vocabulary acquisition but also for fostering meaningful engagement in the learning process.

The analysis uses auditory analysis. Theoretically, this study aims to identify phonological errors of students with intellectual disabilities learning vocabulary, explore how to teach vocabulary to students with intellectual disabilities using flashcards and inspire further research on developing comprehensive learning tools. into vocabulary learning, the study hopes to foster a more inclusive and supportive educational environment for all students. Ultimately, this research aspires to enhance English language proficiency and academic success for learners with intellectual disabilities.

LITERATURE REVIEW

Understanding Intellectual disabilities and Language Learning Challenges

Intellectual disabilities, now commonly referred to as intellectual disability, is characterized by significant limitations in intellectual functioning and adaptive behavior, affecting conceptual, social, and practical skills (Shree & Shukla, 2016). These limitations pose challenges in various aspects of education, particularly in language acquisition. Students with intellectual disabilities often experience delayed cognitive processing, difficulty in memory retention, and struggles with abstract thinking, which affect their ability to learn vocabulary and develop phonological awareness (Schuit et al., 2011). Language learning requires cognitive abilities such as memory, recognition, and articulation, which may be underdeveloped in these students. Additionally, their social limitations may reduce opportunities for language practice, further hindering language acquisition.

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Studies have highlighted that specialized teaching methods, such as visual aids and multisensory approaches, significantly improve language learning outcomes for students with cognitive disabilities. These methods cater to their specific learning needs, making it essential for educators to explore innovative teaching strategies.

Phonological Errors in Language Learning

Phonological errors occur when students incorrectly produce speech sounds due to difficulties in distinguishing or articulating phonemes. These errors are common among individuals learning a second language but are more pronounced in students with intellectual disabilities due to their limited phonological awareness and processing abilities (Dessemontet & Chambrier, 2015). In English, phonological errors may include mispronunciation of consonants and vowels, omissions of sounds, substitutions, and distortions, which can interfere with effective communication. Understanding these errors is crucial because phonological awareness is a foundational skill for language learning, influencing reading, speaking, and overall comprehension. Research suggests that students with intellectual disabilities benefit from explicit phonological training and structured auditory exercises, which help improve pronunciation and speech clarity. By analyzing these errors through auditory analysis and reference to the Cambridge Dictionary, this study seeks to identify common pronunciation challenges and propose teaching interventions to address them.

Inclusive Education and Tailored Teaching Strategies

Inclusive education ensures that students with disabilities learn alongside their peers while receiving appropriate support and modifications (Arianti & Rini, 2022). This approach promotes social integration and fosters a sense of belonging, which is essential for motivation and confidence-building. However, inclusive classrooms require adaptive teaching strategies that cater to students with different learning abilities. Research emphasizes the need for differentiated instruction, scaffolding, and multimodal teaching techniques to accommodate diverse learners (Oktapyanto, 2016). For students with intellectual disabilities, teachers must employ repetitive learning, structured lesson plans, and step-by-step instruction to enhance comprehension and retention. Furthermore, creating an emotionally supportive environment encourages engagement and reduces anxiety, which is crucial for language learning (Hajiyeva, 2024). Despite these benefits, challenges remain, particularly in teaching English as a foreign language in Indonesia, where resources and specialized training for special education teachers are often limited (Marzuki et al., 2024). This study aims to explore whether using flashcards can bridge these challenges by providing a structured and engaging vocabulary-learning method for students with intellectual disabilities.

The Significance of Flashcard in Language Learning

Recent studies have underscored the effectiveness of flashcards as a visual and multisensory instructional tool for students with intellectual disabilities, particularly in language acquisition and engagement. Flashcards provide structured visual stimuli that assist learners in associating words with images and sounds, facilitating the detection and correction of phonological errors through repetition and auditory reinforcement (Schuchardt et al., 2011; Waring et al., 2017). This approach is especially beneficial for students with intellectual disabilities, who often face challenges with abstract linguistic concepts and benefit from concrete, consistent input (Huba & Belfiore, 2023). Moreover, flashcards enable educators to isolate specific phonemes or syllables, making them valuable for identifying common mispronunciations and tailoring corrective feedback. In terms of engagement, research indicates that the interactive and game-like nature of flashcard activities boosts student motivation and attention span in inclusive and special education settings (Johnson & McCabe, 2015). The use of colorful visuals, manageable information chunks, and immediate feedback through flashcards contributes to sustained attention and more active participation, which are critical factors in the learning process for students with cognitive challenges. These findings highlight the dual function of flashcards not only as a medium for

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vocabulary learning but also as a diagnostic and motivational tool in phonological instruction for students with intellectual disabilities.

RESEARCH METHODOLOGY

This research employed a qualitative approach to explore and identify phonological errors of students with intellectual disabilities in learning vocabulary and explore how to teach vocabulary to students with intellectual disabilities using flashcards at SLB Yamet School Cendana Lampung. The study involved a systematic process that began with purposive sampling, where four students were selected from a population of 19, focusing specifically on those with medium to high levels of mental disorders, and this research took 4 students using the purposive sampling technique, with the criteria of medium to high autism. AAM (Attention Deficit Hyperactivity Disorder/ADHD) 12th-year-old, DMA (Autistic Spectrum Disorder/ASD) 13th-year-old, AGP (Autistic Spectrum Disorder/ASD) 12th-year-old, MHA (Communication Disorder type Language Disorder and Learning disorder ADHD accompanied by Emotional behavioral disorders, temper tantrums, rejection behavior, impaired concentration, and dyspraxia) 13th-year-old. Data collection encompassed both observation and documentation, ensuring a comprehensive understanding of the teaching and learning process. The researchers took on dual roles as both teacher and observer, conducting several vocabulary lessons with the aid of flashcards. Each session was recorded to capture not only the interactions but also the students' responses to the instructional method. This approach provides rich qualitative data that highlights how flashcards facilitate vocabulary acquisition for students with cognitive challenges.

The data were analyzed using auditory analysis, which involved listening carefully to recorded student speech to identify specific phonological errors such as mispronunciations of consonants, vowel substitutions, and syllable omissions. The researcher compared students' pronunciation with standard references from the Cambridge Dictionary to assess accuracy and retention of vocabulary. The research procedure followed a structured sequence: initially, the researcher conducted teaching sessions using flashcards, followed by data collection through classroom observations and video recordings. After the data were gathered, they were analyzed to identify common patterns of phonological errors and to evaluate students' vocabulary learning outcomes. This systematic approach ensured that the flashcards as a teaching tool was engaged the students. Furthermore, the findings were interpreted in the context of existing literature on language learning among students with intellectual disabilities, offering insights that can inform future instructional strategies specifically in the area of vocabulary development and pronunciation support.

FINDINGS AND DISCUSSION

Auditory Analysis of Students' Sound

Four students with different intellectual disabilities were observed during the teaching and learning process using flashcards for vocabulary learning. The four students pronounced English words in different ways which were then analyzed using auditory analysis. The results of the auditory analysis are presented in the following table which conducted in 6 meetings.

In the first observation, four students were observed to see how their engagement in the class and their pronunciation of words. The following is the pronunciation of the students analyzed using auditory analysis:

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Table 1. Sound spoken by AAM

	Words	Sound Spoken
Meeting 1	Lemon /'lemən/	/le mon/
	coconut /'kɒkənət/	/kokonut/
	Cat /kæt/	/ket/
	Bird /bɜ:d/	/brit/
	Penguin /'pɛŋɡwɪn/	/pingwin/
Meeting 2	Horse /hɔ:s/	/hors/
	Butterfly /'batəflai/	/baterflai/
	Pineapple /'paɪnæpl/	/pinapel/
	Grape /ɡreɪp/	/gɾep/
	Squirrel /'skwɪrəl, (American) 'skwə:rəl/	/sekuirel/
Meeting 3	Crocodile /'krɒk.ə.dail/	/krokodey/
	Shark /ʃɑ:k/	No response
	Dolphin /'dɒl.fɪn/	/dolpin/
	Crab /kræb/	/kɾep/
	Octopus /'ɒk.tə.pəs/	/oktopuks/
Meeting 4	Snake /sneɪk/	/snek/
	Lizard /'lɪz.əd/	/lisar/
	Peacock /'pi:kɒk/	/picok/
	Kangaroo /kəŋɡə'ru:/	/kangguro/
	Panda /'pændə/	/panda/
Meeting 5	Kiwi /'ki:wi:/	/kiwi/
	Cherry /'tʃer.i/	/ceri/
	Papaya /pə'paɪ.ə/	/papaya/
	Snack fruit /snæk fru:t/	No response
	Durian /'dʊr.i.ən/	/durian/
Meeting 6	Snail /sneɪl/	/snail/
	Mosquito /mə'ski:tu:/	Talk with others
	Goat /ɡəʊt/	/got/
	Cow /kaʊ/	/kaʊ/
	Bee /bi:/	/be:/

Based on the observation results, AAM (with ADHD) demonstrates several phonological errors during the flashcard sessions. In the first meeting, his pronunciation of words like "lemon" (/ 'lemən/) turned into "le mon," "coconut" (/ 'kɒkənət/) became "kokonut," and "cat" (/kæt/) was pronounced as "ket." These simplifications are common in children with ADHD, as they tend to shorten or alter words to make them easier to pronounce. Additionally, AAM showed difficulty in fully articulating certain words, such as "shark" (/ʃɑ:k/) during the third meeting, where he did not respond at all. Some words like "grape" (/ɡreɪp/) were pronounced incorrectly as "gɾep," indicating a tendency to simplify complex sounds. However, words like "panda" (/ 'pændə/) were pronounced correctly, showing that familiar words are easier for him to say.

In terms of engagement with the flashcards, AAM exhibited some challenges in focusing, which is a common trait in children with ADHD. During meeting six, AAM became distracted while trying to pronounce "mosquito" (/mə'ski:tu:/), choosing instead to engage in conversation with others. This lack of sustained attention can impact his ability to fully participate in learning activities. However, in other meetings, he seemed more engaged with words that were simpler or more familiar to him, such as "kiwi" (/ 'ki:wi:/) and "cow" (/kaʊ/). This suggests that AAM might be more interested in words that are easier to pronounce or associated with things he already knows. Therefore, his level of involvement might depend on the familiarity and simplicity of the vocabulary being introduced.

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The use of flashcards proved to be a potentially effective tool for AAM, but it requires adjustments to better suit his specific needs. Flashcards could be more effective if the number of words introduced in each session is reduced, allowing for better focus and retention. Repetition of difficult words would also help reinforce learning, especially for challenging sounds like in "crocodile" (/ˈkrɑː.kə.dail/) or "octopus" (/ˈɑk.tə.pəs/). Visual aids such as pictures or interactive activities could further engage AAM, making the learning process more dynamic and enjoyable. Additionally, varying the way words are introduced—such as through games or matching activities—could help maintain his attention. Ultimately, with these adaptations, flashcards can be an effective tool to support AAM's learning and address his phonological errors.

Table 2. Sound spoken by DMA

	Words	Sound Spoken
Meeting 1	<i>Lemon</i> /ˈlemən/	No response
	<i>coconut</i> /ˈkɒkənət/	/kokonat/
	<i>Cat</i> /kæt/	/ket/
	<i>Bird</i> /bɜːd/	No response
	<i>Penguin</i> /ˈpɛŋɡwɪn/	/pengwin/
Meeting 2	<i>Horse</i> /hɔːs/	No response
	<i>Butterfly</i> /ˈbʌtəflaɪ/	/baterfai/
	<i>Pineapple</i> /ˈpaɪnæpl/	/pineapel/
	<i>Grape</i> /ɡreɪp/	No response
	<i>Squirrel</i> /ˈskwɪrəl, (American) ˈskwəːrəl/	/Serkuirel/
Meeting 3	<i>Crocodile</i> /ˈkrɒk.ə.dail/	/kokodail/
	<i>Shark</i> /ʃɑːk/	No response
	<i>Dolphin</i> /ˈdɒl.fɪn/	No response
	<i>Crab</i> /kræb/	/rep/
	<i>Octopus</i> /ˈɒk.tə.pəs/	/topus/
Meeting 4	<i>Snake</i> /sneɪk/	/snek/
	<i>Lizard</i> /ˈlɪz.əd/	/lisa/
	<i>Peacock</i> /ˈpiːkɒk/	No response
	<i>Kangaroo</i> /ˈkæŋɡəˈruː/	No response
	<i>Panda</i> /ˈpændə/	/panda/
Meeting 5	<i>Kiwi</i> /kiːwiː/	/wi/
	<i>Cherry</i> /ˈtʃer.i/	/eri/
	<i>Papaya</i> /pəˈpaɪ.ə/	/aaya/
	<i>Snack fruit</i> /snæk fruːt/	No response
	<i>Durian</i> /ˈdʊr.i.ən/	/urian/
Meeting 6	<i>Snail</i> /sneɪl/	/snel/
	<i>Mosquito</i> /məˈskiː.tʊ/	Tell in Indonesia
	<i>Goat</i> /ɡoʊt/	Tell in Indonesia
	<i>Cow</i> /kaʊ/	Tell in Indonesia
	<i>Bee</i> /biː/	Tell in Indonesia

Based on the observations, DMA (who has autism) showed several responses phonological errors and engagement during the flashcard sessions. In the first meeting, DMA displayed a lack of response for certain words, such as "lemon" (/ˈlemən/) and "bird" (/bɜːd/). However, for words like "coconut" (/ˈkɒkənət/) and "penguin" (/ˈpɛŋɡwɪn/), DMA responded, though some were not entirely accurate, like "kokonat" and "pengwin." DMA tended to simplify words, such as pronouncing "cat" (/kæt/) as "ket" or "grape" (/ɡreɪp/) as "grape" or leaving out more complex sounds. It's common for children with autism to have difficulty with speech production, and DMA's responses show a preference for simplifying sounds, possibly to avoid complex articulation patterns.

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DMA's engagement with the flashcards appeared somewhat inconsistent. For example, in meetings 1, 2, and 3, he responded to a few words but left several unspoken, such as "horse" (/ho:s/) and "shark" (/ʃɑ:k/). This lack of response could indicate that DMA found these words too challenging or that he was distracted or not fully engaged in the learning task. On the other hand, DMA responded to simpler words such as "panda" (/ˈpæn.də/) and "kiwi" (/ˈki:wi:/) with less difficulty, showing a greater level of engagement with familiar or more straightforward words. His tendency to skip complex words or ask to "tell in Indonesia" suggests that he may have a stronger preference for words that are easier for him to process, or that he feels more comfortable with.

Flashcards can be a useful learning tool for children with autism, but their effectiveness can be enhanced by tailoring the approach to meet individual needs. DMA might benefit from having fewer words introduced in each session and allowing more time for him to process each word. Visual aids and repetition of simpler words can help with both engagement and retention. For words that DMA finds particularly challenging, breaking them down into smaller phonetic parts or using familiar references might support better pronunciation. Additionally, incorporating his preference for using familiar language (e.g., asking to "tell in Indonesia") could be a way to reduce anxiety or frustration while learning. By adjusting the pace and complexity of the vocabulary, flashcards can be an effective tool for DMA's language development.

Table 3. Sound spoken by AGP

	Words	Sound Spoken
Meeting 1	Lemon /ˈlemən/	/eon/
	coconut /ˈkəʊkənət/	/oonat/
	Cat /kæt/	/et/
	Bird /bɜ:d/	/it/
	Penguin /ˈpeŋɡwɪn/	/uin/
Meeting 2	Horse /ho:s/	/ors/
	Butterfly /ˈbʌtəflaɪ/	/aeai/
	Pineapple /ˈpaɪnæpl/	/ape/
	Grape /ɡreɪp/	/grap/
	Squirrel /ˈskwɪrəl, (American) ˈskwə:rəl/	/iel/
Meeting 3	Crocodile /ˈkrɒk.ə.dail/	/oodil/
	Shark /ʃɑ:k/	No response
	Dolphin /ˈdɒl.fɪn/	No response
	Crab /kræb/	/ap/
	Octopus /ˈɒk.tə.pəs/	/opus/
Meeting 4	Snake /sneɪk/	/ek/
	Lizard /ˈlɪz.əd/	/isar/
	Peacock /ˈpi:kɒk/	/pi:ok
	Kangaroo /ˌkæŋɡəˈru:/	Cannot answer
	Panda /ˈpæn.də/	/anda/
Meeting 5	Kiwi /ˈki:wi:/	/ors/
	Cherry /ˈtʃer.i/	/aeai/
	Papaya /pəˈpaɪ.ə/	/ape/
	Snack fruit /snæk fru:t/	/grap/
	Durian /ˈdʊr.i.ən/	/iel/
Meeting 6	Snail /sneɪl/	/eil/
	Mosquito /məˈski:tu:/	Cannot answer
	Goat /ɡəʊt/	Cannot answer
	Cow /kaʊ/	/ou/
	Bee /bi:/	/i/

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Based on the observations, AGP (with a communication disorder) showed significant phonological errors during the flashcard sessions. In the first meeting, AGP's responses were often incomplete or altered, such as pronouncing "lemon" (/ˈlemən/) as "eon" and "coconut" (/ˈkəʊkənət/) as "oonat." Many words were simplified to the point where they barely resembled the original sounds, such as "cat" (/kæt/) becoming "et" or "bird" (/bɜːd/) turning into "it." AGP had difficulty producing the full phonetic structure of words, often omitting consonants or vowel sounds. This is typical for children with communication disorders, who may struggle with articulating complex phonetic patterns and constructing full-word forms. The simplification observed is likely due to difficulties in coordinating the motor functions needed for speech.

AGP's engagement with the flashcards seemed inconsistent, with some words prompting a response while others were ignored. For instance, AGP responded to "penguin" (/ˈpeŋɡwɪn/) with "uin," showing a partial attempt at the word. However, for words like "shark" (/ʃɑːk/) and "mosquito" (/məˈskiːtəʊ/), AGP either failed to respond or requested assistance by asking for help. The tendency to simplify or omit parts of the word may indicate frustration or difficulty processing more complex sounds, which is common in children with communication disorders. On the other hand, AGP did engage with simpler words like "panda" (/ˈpændə/) and "kiwi" (/ˈkiːwiː/), though these were also not always pronounced correctly, such as "kiwi" becoming "ors."

Flashcards appeared to be a useful tool for AGP, as they provided a structured and visual means to support vocabulary acquisition and phonological development. AGP able to recognize and attempt to pronounce target words during flashcard sessions, as well as his increased responsiveness when visuals were paired with spoken input. However, adjustments may be necessary to accommodate his specific needs. To support AGP more effectively, it would be beneficial to introduce simpler, high-frequency words and use clear visuals that help link sounds to meanings. Repetition and slower-paced instruction allowed AGP to practice difficult words across multiple sessions, which led to small but noticeable improvements in pronunciation and confidence. Reducing the complexity of vocabulary introduced in each session also helped him remain more engaged and attentive. Furthermore, incorporating verbal prompts and articulation cues provided needed support in producing correct sounds. With these modifications, flashcards demonstrated value as a learning aid that could help AGP improve his communication and phonological skills, despite the challenges presented by his communication disorder.

Table 4. Sound spoken by MHA

	Words	Sound Spoken
Meeting 1	<i>Lemon</i> /ˈlemən/	/le:mon/
	<i>coconut</i> /ˈkəʊkənət/	/kokonut/
	<i>Cat</i> /kæt/	/ket/
	<i>Bird</i> /bɜːd/	/bert/
	<i>Penguin</i> /ˈpeŋɡwɪn/	/pinguin/
Meeting 2	<i>Horse</i> /hɔːs/	/hor/
	<i>Butterfly</i> /ˈbʌtəflaɪ/	/buterflai/
	<i>Pineapple</i> /ˈpaɪneɪpl/	/pinapel/
	<i>Grape</i> /ɡreɪp/	/gɾep/
	<i>Squirrel</i> /ˈskwɪrəl, (American) ˈskwəːrəl/	/spirel/
Meeting 3	<i>Crocodile</i> /ˈkrɒk.ə.dail/	/korkodail/
	<i>Shark</i> /ʃɑːk/	No response
	<i>Dolphin</i> /ˈdɒl.fɪn/	/dolpin/
	<i>Crab</i> /kræb/	/kɾep/
	<i>Octopus</i> /ˈɒk.tə.pəs/	/oktopusl/
Meeting 4	<i>Snake</i> /sneɪk/	/sneik/
	<i>Lizard</i> /ˈlɪz.əd/	/lisag/
	<i>Peacock</i> /ˈpiːkɒk/	Tell other topics
	<i>Kangaroo</i> /kənɡəˈruː/	/kanguru/

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	<i>Panda</i> /'pæn.də/	/panda/
Meeting 5	<i>Kiwi</i> /'ki.wi:/	/kiwi/
	<i>Cherry</i> /'tʃer.i/	/ceri/
	<i>Papaya</i> /pə'pai.ə/	/papaya/
	<i>Snack fruit</i> /snæk fru:t/	/snek fruit/
	<i>Durian</i> /'dʊr.i.ən/	/durian/
Meeting 6	<i>Snail</i> /sneil/	/snel/
	<i>Mosquito</i> /mə'ski:.tʊʊ/	/moskito/
	<i>Goat</i> /goot/	/got//
	<i>Cow</i> /kəʊ/	<i>Tell other topics</i>
	<i>Bee</i> /bi:/	/bi:/

Based on the observations, MHA (with a slow learner condition) shows a mix of phonological errors and partial engagement in the flashcard sessions. In the first meeting, MHA displayed some errors in pronunciation, such as saying "lemon" (/lemən/) as "le:mon" and "cat" (/kæt/) as "ket." There was also simplification, with words like "bird" (/bɜ:d/) pronounced as "bert" and "penguin" (/penɡwɪn/) as "pinguin." These errors suggest that MHA struggles with producing certain vowel and consonant sounds, which is typical for children with slower language development. While some words were pronounced incorrectly, MHA showed an effort to produce the sounds, indicating that he was engaged in trying to pronounce them, even if the phonetic accuracy was off.

MHA's engagement with the flashcards appeared to inconsistency throughout the sessions. In the second meeting, MHA responded to words like "butterfly" (/batəflai/) by saying "buterflai" and "grape" (/greɪp/) as "grep," showing that he was participating, but with varying degrees of accuracy. However, there were instances where MHA opted to shift focus, such as when he asked to talk about "other topics" instead of responding to "peacock" (/pi:kɒk/). This suggests that MHA's attention span may be limited, and he could have been distracted or disengaged by more complex words. On the other hand, MHA showed a consistent response to simpler words like "kiwi" (/ki.wi:/) and "panda" (/pæn.də/), which were pronounced more accurately, indicating a preference for easier-to-articulate words.

Flashcards appear to be a useful tool for MHA, but certain modifications could improve the effectiveness of the sessions. Simplifying the vocabulary introduced in each meeting and incorporating more visual aids could help maintain MHA's interest and improve pronunciation. Repetition and additional practice with more challenging words, broken down into smaller components, might also help MHA make progress with complex sounds. Furthermore, offering verbal cues or prompts when MHA struggles to produce the correct sounds could assist him in making connections between the words and their phonetic forms. Overall, flashcards can be a helpful medium for MHA's language development if the learning pace is adjusted to his specific needs, allowing for both progress and engagement.

Discussion

The findings of this study align with prior research on the use of flashcards and their impact on student engagement and phonological learning, particularly for students with intellectual disabilities. For students like AAM and AGP, flashcards proved effective in enhancing classroom participation and motivation, consistent with Prameswari & Akhiriyah (2023), who highlighted the importance of visual aids in vocabulary retention. Both students displayed enthusiasm, confirming the utility of flashcards as an interactive learning tool. However, despite this engagement, pronunciation errors, particularly in word stress and initial consonants, persisted, suggesting that while flashcards foster active learning, additional methods are needed to address specific linguistic challenges.

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For students such as DMA and MHA, who experience lower engagement due to conditions like ASD and slow learning, the findings emphasize the need for differentiated instructional strategies. DMA's limited interaction and reliance on repetitive behaviors mirror the communication barriers outlined by Karningtyas et al. (2009) and Pratiwi et al. (2019) regarding children with ASD. Likewise, MHA's struggles with comprehension and delayed responses reflect the cognitive difficulties associated with slow learning, as noted by Bayu Prasetyo & Rahmasari (2016). These results suggest that although flashcards serve as a valuable tool, they are not enough for learners with more severe cognitive or behavioral changes. A more comprehensive approach, incorporating multisensory activities and tailored therapeutic interventions, is necessary to better address the diverse needs of these students.

Thus, this study reinforces the importance of adapting teaching methods to the individual abilities and challenges of students with mental disorders, as added by Prameswari & Akhiriyah (2023). While flashcards can facilitate learning for some students, a holistic approach that includes supplementary strategies and tailored support is essential for improving outcomes for students with more significant cognitive or developmental difficulties.

CONCLUSION AND SUGGESTIONS

To summarize, this study demonstrates the instructional value of flashcards in engaging students with intellectual and communication disorders and in supporting phonological learning, particularly for those with ADHD and related challenges. In this context, instructional value refers to observable indicators such as increased student participation, sustained attention during activities, attempts at verbal output, and improved word recognition across sessions. For students like AAM and AGP, flashcards helped foster active engagement and motivation, aligning with previous research that highlights the benefits of visual aids in vocabulary retention. However, persistent pronunciation errors—especially related to word stress and initial consonants—indicate that while flashcards promote interactive learning and vocabulary exposure, they may not be sufficient on their own to address more complex phonological difficulties. This suggests a need for complementary strategies to enhance speech accuracy alongside visual learning tools.

For students with more severe cognitive and behavioral limitations, such as DMA and MHA, the study emphasizes the need for differentiated instructional strategies. While flashcards proved useful as a visual tool, they were not enough to overcome the communication barriers and cognitive difficulties faced by these students. A more comprehensive approach, incorporating multisensory activities and therapeutic interventions, is essential to meet their individual needs. Overall, this study highlights the importance of adapting teaching methods to the unique abilities and challenges of students with mental disorders to create more inclusive and effective learning experiences.

REFERENCES

- Agistiawati, E. (2020). Pengaruh Persepsi Siswa Atas Lingkungan Belajar dan Penguasaan Kosakata Terhadap Kemampuan Berbicara Bahasa Inggris Siswa Sekolah Menengah Atas Swasta Balaraja. *Journal of Education, Psychology and Counseling*, 2(1), 513–523. <https://ummaspul.e-journal.id/Edupsycouns/article/view/516>
- Arianti, R., & Rini, R. (2022). Learning of Children with Special Needs in Inclusive Schools. *JOSR: Journal of Social Research Desember*, 2022(1), 142–147. <https://doi.org/10.55324/josr.v2i1.474>

*Author(s) Correspondence:
 E-mail: derisisnanda@ubl.ac.id

- Baharun, H., & Awwaliyah, R. (2018). Pendidikan Inklusi bagi Anak Berkebutuhan Khusus dalam Perspektif Epistemologi Islam. *MODELING: Jurnal Program Studi PGMI*, 5(1), 57–71. <https://doi.org/10.69896/modeling.v5i1.209>
- Bayu Prasetyo, K., & Rahmasari Jurusan Psikologi, D. (2016). Hubungan Antara Dukungan Sosial Keluarga dengan Motivasi Belajar pada Anak. *Jurnal Penelitian Psikologi*, 07(01), 1–9. <https://jurnalfpk.uinsa.ac.id/index.php/JPP/article/view/92>
- Dessementet, R. S., & Chambrier, A.-F. de. (2015). The role of phonological awareness and letter-sound knowledge in the reading development of children with intellectual disabilities. *Research in Developmental Disabilities*, 41–42, 1–12. <https://doi.org/10.1016/j.ridd.2015.04.001>
- Dibra, B. (2014). Education as a fundamental right and human rights acquired through education. *Mediterranean Journal of Social Sciences*, 5(19), 155–159. <https://doi.org/10.5901/mjss.2014.v5n19p155>
- Hajiyeva, B. (2024). Language Anxiety in ESL Learners: Causes, Effects, and Mitigation Strategies. *EuroGlobal Journal of Linguistics and Language Education*, 1(1), 119–133. <https://doi.org/10.69760/pn9wgv05>
- Huba, K., & Belfiore, P. J. (2023). Using flashcards and descriptive feedback to teach industrial kitchen equipment to a student with intellectual disabilities in a postsecondary education program. *Behavior Analysis in Practice*, 17(2), 544–552. <https://doi.org/10.1007/s40617-023-00853-6>
- Johnson, K. M., & McCabe, P. P. (2015). Effectiveness of digital flashcards in enhancing engagement and vocabulary acquisition in mathematics: The case of students with learning disabilities. *AIDE Interdisciplinary Research Journal*, 1(1), 1–10. <https://journal.aide-inc.net/index.php/aide-irj/article/view/16>
- Karningtyas, M. A., Wiendijarti, I., & Prabowo, A. (2009). Pola Komunikasi Interpersonal Anak Autis di Sekolah Autis Fajar Nugraha Yogyakarta. *Jurnal Ilmu Komunikasi*, 7(2), 120–129. <https://doi.org/10.31315/jik.v7i2.16>
- Marzuki, Wulyani, A. N., Hidayati, Sata, M. R. I. M., & Rusdin, D. (2024). Overcoming challenges: Indonesian EFL teachers' strategies for using moodle in high schools. *Social Sciences and Humanities Open*, 10. <https://doi.org/10.1016/j.ssaho.2024.101175>
- Oktapyanto, R. R. Y. (2016). Penerapan Model Pembelajaran Simulasi untuk Meningkatkan Keterampilan Sosial Anak Sekolah Dasar. *Jurnal Pendidikan Sekolah Dasar*, 2(1), 96–108. <https://doi.org/10.30870/jpsd.v2i1.671>
- Prameswari, I. D., & Akhiriyah, S. (2023). The Correlation Between Reading Fluency and Students' Reading Comprehension in Junior High School. *Journal of English Teaching, Literature, and Applied Linguistics*, 7(2), 39. <https://doi.org/10.30587/jetlal.v7i2.5944>
- Pratiwi, M. R., Mardiana, L., & Yusriana, A. (2019). Komunikasi Non Verbal Anak Autis pada Masa Adaptasi Pra Sekolah. *Komunida: Media Komunikasi Dan Dakwah*, 09, 37–52. <http://ejurnal.stainparepare.ac.id/index.php/komunida>
- Schuchardt, K., Gebhardt, M., & Mäehler, C. (2011). Functional deficits in phonological working memory in children with intellectual disabilities. *Research in Developmental Disabilities*, 32(2), 677–683. <https://doi.org/10.1016/j.ridd.2010.11.005>

*Author(s) Correspondence:
 E-mail: derisisnanda@ubl.ac.id

- Schuit, M. Van der, Segers, E., Balkom, H. van, & Verhoeven, L. (2011). How cognitive factors affect language development in children with intellectual disabilities. *Research in Developmental Disabilities*, 32(5), 1884–1894. <https://doi.org/10.1016/j.ridd.2011.03.015>
- Shree, A., & Shukla, P. C. (2016). Intellectual Disability: Definition, classification, causes and characteristics. *Learning Community-An International Journal of Educational and Social Development*, 7(1), 9. <https://doi.org/10.5958/2231-458x.2016.00002.6>
- Susanto, & Nanda, D. S. (2023). Analyzing the Student's Phonological Awareness and Its Relation to The Reading Skill In EFL Classroom. *Jurnal Ilmiah Peuradeun*, 11(2), 425–440. <https://doi.org/10.26811/peuradeun.v11i2.793>
- Waring, R., Eadie, P., Rickard Liow, S., & Dodd, B. (2017). The phonological memory profile of preschool children who make atypical speech sound errors. *Clinical Linguistics & Phonetics*, 31(8), 617–635. <https://doi.org/10.1080/02699206.2017.1326167>
- Zendeli, E. (2017). The right to education as a fundamental human right. *Contemporary Educational Researches Journal*, 7(4), 158–166. <https://doi.org/10.18844/cerj.v7i4.2718>
- Zuhro, C., & Hermawati, D. A. (2017). Pelatihan Bahasa Inggris Komunikatif Sebagai Upaya Peningkatan Kualitas SDM Dalam Menghadapi Tantangan MEA Bagi Santriwati Pondok Pesantren Al-Husna Jember. *Jurnal Pengabdian Masyarakat*, 1. <https://doi.org/10.25047/j-dinamika.v2i1.444>