

The Death of the Dictionary: Is Reliance on Digital Language Tools Eroding Deep Vocabulary Learning?

¹Ameh Timothy Ojochegbe ²Clement Gowon Omachonu ³Onoja Peter

¹timothyameh.edu@gmail.com ²gomachonu316@gmail.com
³pitvic2003@gmail.com

^{1,2}Department of Arts Education (English Language),
Prince Abubakar Audu University Anyigba.

³ Kogi State College of Education, Ankpa

Abstract: *This study explores the shifting dynamics of vocabulary acquisition in the context of digital language tools, comparing their impact on the depth and breadth of learning to that of traditional dictionaries. With the increasing reliance on digital tools such as online dictionaries, translation apps, and AI-driven platforms, concerns arise regarding their effectiveness in fostering comprehensive vocabulary understanding. The study was conducted across five secondary schools with a total population of 2,549 learners and educators. A sample size of 55 participants was selected, comprising 30 language learners (survey participants), 15 learners (interview participants), and 10 educators (interview participants). Using a mixed-methods approach, the research combined survey data, interviews, focus group discussions, and document analysis to offer a comprehensive evaluation of these tools. Results indicate that 90% of participants widely adopt digital tools, valuing them for their speed, accessibility, and gamified features, which enhance engagement and foster the rapid acquisition of a broad vocabulary. However, findings also reveal that their focus on convenience often leads to superficial learning, with limited attention to contextual and cultural nuances essential for deeper language mastery. In contrast, traditional dictionaries and learning methods promote thorough engagement, enabling learners to grasp semantic relationships, collocations, and the pragmatic use of words. The study advocates for a blended approach that combines the efficiency of digital tools with the depth offered by traditional resources. It recommends that digital platforms be enhanced with semantic networks, situational examples, and cultural references to support deep*

vocabulary learning. Furthermore, educators should integrate active, context-based teaching strategies that merge digital and traditional methods to optimize vocabulary acquisition in contemporary language learning.

Keywords: Digital language tools, Vocabulary acquisition, Traditional dictionaries, Deep vocabulary learning, Contextual understanding.

Introduction

The digital age has transformed many aspects of daily life, and education is no exception. The use of digital tools in language learning has become ubiquitous, making information more accessible than ever before. The traditional dictionary, has largely been replaced by a new wave of digital tools, including online dictionaries, translation apps, vocabulary-building platforms, and AI-driven language assistants (Kukulska-Hulme, 2012). These tools promise to enhance the speed and accessibility of learning, offering instant feedback and a broader range of vocabulary. However, their increased use has raised concerns among educators and linguists about the impact on learners' ability to engage deeply with language.

Traditionally, dictionaries were more than just a source of definitions. For many language learners, the process of looking up a word in a physical or electronic dictionary was an opportunity to understand its full scope—its nuances, uses in various contexts, etymology, and related forms (Summers, 2024). With digital tools offering instant access to word meanings, pronunciation guides, and synonyms, learners no longer need to engage as deeply with the word's full linguistic context. This shift may be contributing to a loss in "depth" of vocabulary acquisition, where learners gain a broader range of words but lack the ability to use these words accurately and effectively in varied linguistic contexts (Nagy & Townsend, 2012).

The central issue addressed by this study is the potential erosion of deep vocabulary learning due to the reliance on digital language tools. Deep vocabulary learning refers not only to knowing a word's meaning but also understanding its nuances, connotations, and contextual appropriateness (Beck, McKeown, & Kucan, 2013). In contrast, digital tools often provide immediate, surface-level information—quick translations and definitions—that may reduce the cognitive effort required for deeper engagement with language. While digital tools may facilitate initial exposure to new vocabulary, there are concerns that they might undermine the more complex, meaningful processes involved in mastering vocabulary, such as applying it in context, making word associations, and internalizing its meaning.

As digital tools continue to play a larger role in language learning, the question arises: Are these tools eroding learners' ability to acquire deep vocabulary

knowledge, or are they simply changing how language learning is approached? This research will focus on understanding how learners and educators perceive the role of digital tools in vocabulary acquisition and the potential trade-offs between convenience and depth.

The Rise of Digital Language Tools

The rise of digital language tools has revolutionized the way learners engage with language acquisition, making them an integral part of modern education. Tools such as Google Translate, Word Reference, Duolingo, and Memrise offer a range of functionalities that streamline the learning process. These tools provide users with immediate access to translations, vocabulary lists, and even context-based suggestions, which help learners understand and apply new words more efficiently. By delivering on-demand word meanings, they remove traditional barriers to accessing language resources, such as the time-consuming process of manually looking up words in dictionaries. Recent studies have shown that digital tools, particularly those incorporating gamification and AI-based feedback systems, significantly enhance vocabulary retention compared to traditional methods (Wei, 2024).

One of the most notable advancements of digital language tools is their use of machine learning and artificial intelligence (AI) to adapt to a learner's proficiency level. These technologies allow platforms to offer personalized learning experiences tailored to individual needs. For instance, tools like Duolingo and Memrise incorporate algorithms that adjust exercises based on the user's performance, ensuring that the learning content aligns with their progress. This adaptive learning approach facilitates vocabulary acquisition by promoting repetition and spaced learning, two evidence-based strategies known for improving long-term retention (Wei, 2024).

Moreover, the use of multimedia in digital tools significantly enhances their appeal and effectiveness. Visual aids, audio recordings, and interactive exercises work together to create a multisensory learning experience that engages learners on multiple levels. For example, learners can listen to correct pronunciation through audio features, associate words with relevant images, and complete interactive quizzes that reinforce vocabulary through active recall (Nakiyemba, 2024). This multimodal approach not only makes language learning more engaging but also caters to various learning styles, accommodating visual, auditory, and kinesthetic learners' alike (Babazadeh, 2024). The integration of multimedia ensures a more interactive and comprehensive language-learning experience, particularly

beneficial for younger learners and those with shorter attention spans (Capuano & Caballé, 2020).

However, while these tools have significantly enhanced the accessibility and convenience of language learning, concerns have been raised regarding the quality and depth of vocabulary acquisition. Critics argue that the efficiency of digital tools can sometimes lead to surface-level understanding of words. Because users can quickly retrieve translations or definitions with minimal effort, there is often little incentive to engage deeply with a word's meaning, its nuances, or its cultural relevance. For instance, a learner may understand a word's literal definition but fail to grasp its connotations, idiomatic usage, or emotional undertones (Wei, 2024). This lack of deeper understanding can hinder the ability to use vocabulary accurately and appropriately in different contexts, which is critical for achieving true proficiency in a language (Babazadeh, 2024).

The Role of Dictionaries in Language Learning

The role of dictionaries in language learning has been a significant area of discussion, as they remain essential tools in the acquisition of vocabulary and the development of linguistic competence. Dictionaries, whether traditional or digital, serve as key resources for learners seeking to understand and expand their language skills.

Traditional dictionaries, available in print or electronic formats, play a critical role not only as reference materials for definitions but also as active learning tools. The process of searching for a word in a traditional dictionary—whether by flipping through pages or navigating through an electronic version—requires a certain level of cognitive effort. This mental engagement contributes to the retention and consolidation of the word's meaning, as learners must actively engage with the material during the search process. This form of active participation strengthens understanding and encourages deeper learning. Summers (2024) emphasizes that dictionary use is a valid activity for foreign learners of English, aiding both comprehension and production.

Traditional dictionaries also offer comprehensive insights into words that go beyond mere definitions. They often include essential details such as a word's etymology, collocations, word families, and synonyms. These components provide learners with a broader understanding of how words function within a language and how they connect to other words and expressions. For example, by exploring collocations or word families, learners can grasp how a word is used in natural contexts, which enhances their ability to apply the vocabulary accurately and flexibly. Such depth of knowledge is critical for enabling learners to use words

appropriately across various settings, thereby fostering fluency and precision in communication. (Capuano & Caballé, 2020).

However, the advent of digital tools and online resources has transformed the way learners access and use dictionaries. Digital dictionaries, translation applications, and other online tools provide instant access to definitions and translations, making them highly convenient and efficient. While this quick and easy access supports learners, it may sometimes come at the expense of deeper cognitive engagement. The simplicity of digital tools can reduce the mental effort required to understand a word's full meaning, which may hinder long-term retention and mastery. In contrast to the active exploration encouraged by traditional dictionaries, digital tools often deliver information in a way that is isolated and superficial, offering definitions and meanings without context or additional detail. Nied Curcio (2022) discusses the challenges faced by foreign language learners and teachers in the digital era, emphasizing the need for adequate use of reference tools to develop language awareness.

Furthermore, digital resources frequently present words in isolation, making it difficult for learners to see how they interact with other linguistic features. Features such as collocations, cultural context, and word associations, which are central to achieving full comprehension and effective usage of vocabulary, can be overlooked. A lack of exposure to words in meaningful contexts can limit a learner's ability to internalize the nuances of vocabulary and use it appropriately in communication. While digital dictionaries undoubtedly have a place in modern language learning due to their accessibility and speed, they cannot entirely replace the value of traditional dictionaries, which offer a more robust and detailed exploration of words.

In the Nigerian context, Ezech, Anyanwu, and Onunkwo (2022) underscore the indispensable role of dictionaries as learning resources in English as a Second Language (ESL) environments. Their study reveals that 95% of students acknowledged the efficiency of dictionaries in learning English, highlighting the importance of proactive training in dictionary use to maximize its benefits. Additionally, Uguru and Okeke (2020) emphasize the importance of pronunciation in multilingual dictionaries, focusing on Lukumi, Olukumi, and Yoruba languages. Their work demonstrates how pronunciation guides in dictionaries can aid language learners in understanding and mastering word usage across different languages.

Theoretical Anchorage

Cognitive theories on vocabulary acquisition emphasize the importance of depth and richness in word knowledge, asserting that effective vocabulary learning involves more than simply memorizing definitions. Depth of processing theory, proposed by Craik and Lockhart (1972), posits that the more deeply a word is processed, the more likely it is to be retained. Deep processing refers to engaging with a word beyond its superficial meaning; it involves understanding a word's nuances, its usage in different contexts, and its relationships with other words. For example, knowing the meaning of a word like "happy" is not enough to master it; learners must also understand its synonyms, antonyms, connotations, and how it fits within specific contexts or expressions. The theory suggests that such in-depth processing facilitates stronger and longer-lasting retention of vocabulary (Craik & Lockhart, 1972).

Nagy and Townsend (2012) further emphasize that deep vocabulary learning involves understanding both the semantic relationships between words (such as synonyms and antonyms) and their pragmatic usage. Pragmatics refers to how words are used in various social and cultural contexts, which is crucial for effective communication. For instance, the word "inform" can have different connotations depending on whether it's used in a formal report or in casual conversation. Understanding these nuances is vital for learners to use vocabulary accurately in a variety of situations. In line with this, they argue that vocabulary learning is not just about knowing words in isolation, but about understanding how they function within broader linguistic and social systems. This level of understanding, however, is often missing in many digital language tools, which tend to focus on surface-level word recognition rather than on the rich, contextual learning needed for deep vocabulary acquisition.

Digital tools, such as online dictionaries and language apps, can be highly effective in introducing learners to new words and providing quick translations or definitions. However, these tools often fail to offer opportunities for learners to engage with vocabulary in context, which is crucial for developing long-term retention and flexibility in word usage. While digital tools may introduce a learner to the meaning of a word or provide example sentences, they often lack the capacity to facilitate deeper cognitive processes that come with understanding a word's full range of meanings, its nuances, and how it functions in different communicative situations. As a result, learners may acquire words in a shallow manner, without the necessary depth required for mastery (Schmitt & McCarthy, 1997). In addition, because digital tools often present vocabulary in isolation, they can make it more difficult for learners to see how words interact with other words or fit into specific cultural or social contexts, which are key aspects of true language proficiency (Cobb, 2007).

In contrast, incidental vocabulary learning—learning that occurs naturally as a byproduct of activities such as reading or conversation—often involves the kind of rich, contextual engagement that digital tools may struggle to replicate. According to Krashen (1989), incidental vocabulary learning occurs when learners encounter new words in authentic contexts, such as in books, conversations, or real-life situations. These forms of learning provide learners with rich input, which is essential for the development of deep vocabulary knowledge. Krashen's theory of second language acquisition emphasizes the importance of “comprehensible input,” or language that is slightly above the learner's current proficiency level, yet still understandable. Such exposure, he argues, is crucial for vocabulary development, as it encourages learners to use contextual clues to infer the meanings of new words. In these authentic, real-world contexts, learners not only encounter words in a variety of situations but are also required to apply their knowledge in practical ways, reinforcing their understanding and promoting long-term retention.

The advantage of incidental learning lies in its interactive nature. Unlike structured language exercises on digital tools, which can often be passive, incidental learning requires learners to actively engage with language, applying what they know in dynamic and meaningful ways. This interaction—whether through reading a novel, having a conversation, or participating in cultural exchanges—strengthens both the retention of new vocabulary and the ability to use it flexibly across different situations. As Krashen (1989) argues, the depth of this engagement is key to developing not just passive recognition of words but active, flexible usage that learners can apply across a wide range of contexts. Cognitive theories on vocabulary acquisition highlight the importance of depth in learning, emphasizing that true vocabulary mastery requires more than rote memorization. Deep processing and understanding of words, as proposed by Craik and Lockhart (1972), and the recognition of semantic and pragmatic relationships, as discussed by Nagy and Townsend (2012), are crucial for developing a rich vocabulary. Digital tools, while convenient, often fail to provide the kind of rich, contextual learning that supports deep vocabulary acquisition. In contrast, incidental vocabulary learning, through activities such as extensive reading or real-world conversation, allows learners to engage with language in meaningful contexts, promoting long-term retention and flexible usage. For optimal vocabulary development, it is essential to combine digital learning tools with opportunities for authentic, context-based language practice.

The main focus of this study is to explore the impact of digital language tools on deep vocabulary learning. To achieve this, the study focused on the following specific objectives:

1. to explore learners' perceptions of digital tools versus traditional methods in enhancing their vocabulary learning.
2. to examine educators' views on the effectiveness of digital tools in the classroom to foster deep vocabulary learning.
3. to investigate the challenges and benefits of using digital language tools for vocabulary acquisition.
4. to identify the strategies for optimizing vocabulary learning for both digital and traditional method.

Four research questions and five hypotheses guided the study. They are:

Research Questions

1. What is the learners' perception of the effectiveness of digital language tools over the traditional dictionaries in vocabulary acquisition?
2. To what extent do digital tools promote deep vocabulary learning, including contextual and cultural understanding?
3. What are the primary benefits and challenges of using digital tools for vocabulary acquisition?
4. What are the strategies for optimizing vocabulary for digital and traditional methods?

The hypotheses are:

1. The use of digital language tools does not significantly reduce the depth of vocabulary learning compared to traditional dictionaries.
2. Digital language tools do not significantly differ from traditional dictionaries in fostering contextual and cultural understanding of vocabulary.
3. Learners using digital language tools acquire vocabulary with the same depth as those using traditional methods.
4. The gamification and engagement features of digital tools have no significant influence on vocabulary retention and motivation.
5. A blended approach that combines digital and traditional vocabulary learning methods does not offer significant advantages over using digital tools alone.

Methodology

This study adopts a qualitative research approach to explore the experiences, perceptions, and attitudes of both language learners and educators regarding the use

of digital language tools in vocabulary acquisition. The aim is to understand how learners and educators perceive the efficacy of these tools, particularly in terms of fostering deep vocabulary learning. By focusing on the lived experiences of participants, this study will uncover rich, nuanced insights that cannot be captured through purely quantitative methods.

A phenomenological approach was selected to examine how participants experience digital language tools in their vocabulary learning. Phenomenology allows for an in-depth exploration of personal perceptions and interactions with the learning process, providing a deeper understanding of how digital tools are integrated into daily learning practices (Creswell, 2013). The approach will also enable the study to identify both the benefits and limitations of using digital tools for vocabulary learning.

To capture a comprehensive understanding of participants' experiences, three data collection methods were employed: semi-structured interviews, focus group discussions, and document analysis.

Results

Survey Findings

The survey conducted with language learners aimed to assess their usage patterns of digital language tools and their perceived effectiveness in vocabulary acquisition. A total of 30 learners participated in the survey, with a mix of beginner, intermediate, and advanced proficiency levels.

Usage Patterns: The results indicated that 90% of participants used digital language tools (such as Duolingo, Google Translate, and Memrise) regularly in their vocabulary learning. Most learners (around 75%) reported using digital tools multiple times a day for quick reference and practice. Interestingly, 65% of learners used these tools primarily for learning new words, while 45% also relied on them for reviewing and retaining vocabulary.

Perceived Effectiveness: When asked about the effectiveness of digital tools in enhancing vocabulary learning, 80% of learners believed that these tools helped them learn new words quickly. However, only 40% felt that digital tools contributed significantly to understanding a word's contextual usage or cultural connotations. These responses suggest that while learners appreciate the speed and efficiency of digital tools, they may not always foster deep learning.

Learner Engagement: A majority of learners (70%) reported that digital tools were motivating due to their gamification features (e.g., points, badges, and progress tracking). However, 30% of learners expressed frustration with the surface-level nature of vocabulary presented by these tools, especially when it came to understanding the full scope of words beyond definitions. This group of learners felt that digital tools often failed to provide the context needed for deeper comprehension of word meanings.

Interview Insights

Interviews with Learners: In-depth interviews with 15 learners provided richer qualitative data regarding the learners' experiences with digital tools and traditional methods. The learners were asked to describe how they engaged with digital tools and traditional dictionaries in their vocabulary learning.

Depth vs. Breadth: Learners commonly mentioned that digital tools allowed them to quickly acquire a large number of words but did not help them understand the nuances or cultural context associated with these words. One intermediate-level learner

shared:
"I learn many new words every day on Duolingo, but I don't always remember how to use them in real conversations. The app doesn't explain much about how a word is used in different situations."

Another learner emphasized that while digital tools provide fast definitions, the deeper learning of words often requires more manual effort. They stated: *"With a dictionary, I spend more time looking at examples and related words. I can remember a word better when I make those connections."*

Engagement and Motivation: Learners also highlighted the engagement factor of digital tools. Gamification (points, levels, rewards) was noted as a major motivator. One learner

explained:
"It's fun to earn points and unlock new levels. It makes learning feel like a game, and I feel like I'm making progress all the time." However, some learners indicated that after prolonged use, the novelty of gamified digital tools began to wear off, and they expressed a desire for more meaningful and contextual learning.

Interviews with Educators: In parallel, interviews were conducted with 10 educators who had experience using digital tools in their vocabulary teaching. Educators provided insight into the integration of digital tools in classrooms and their perceptions of the tools' effectiveness in fostering deep vocabulary learning.

Effectiveness in the Classroom: Educators generally acknowledged that digital tools were effective for introducing new vocabulary and tracking learners' progress. However, many felt that while digital tools were useful for vocabulary acquisition, they were insufficient in fostering deeper levels of engagement with words. One teacher remarked: *"Students learn words quickly, but they don't always know how to use them outside of the app. They often struggle when asked to use the word in a sentence, especially in a cultural or social context."*

Challenges with Digital Tools: Educators noted that while students could easily memorize words, they often struggled to apply them in real-world conversations. A teacher mentioned: *"The tools are great for learning words in isolation, but they don't prepare students for how words are used in conversation. They miss out on the social and cultural aspects of language learning, which are essential for fluency."* This feedback reinforced the concern that contextual and cultural nuances—critical for deep vocabulary learning—were underrepresented in many digital tools.

Focus Group Findings

Focus group discussions with both learners and educators provided further qualitative insights into the perceived strengths and weaknesses of digital tools.

During focus group discussions, learners collectively agreed that digital tools were a quick and easy way to expand vocabulary, but many felt they lacked sufficient support for deep comprehension. Learners mentioned that while they could recall vocabulary taught via digital platforms, they often struggled to use these words spontaneously in conversations.

Teachers echoed similar sentiments, emphasizing that while digital tools engage students and help introduce vocabulary, they lacked mechanisms for encouraging meaningful usage in real-world contexts.

Both learners and educators expressed a preference for combining digital tools with traditional methods. Many learners felt that traditional dictionaries and face-to-face learning allowed for a more nuanced understanding of words, especially through examples and contextual usage. Teachers also believed that while digital tools could be used for initial exposure, traditional methods (e.g., class discussions, reading exercises) were necessary for deepening vocabulary understanding.

Document Analysis

The document analysis of teaching materials and digital tool interfaces further illuminated the limitations and benefits of digital language tools in promoting deep vocabulary learning. Digital tools were found to be effective in providing instant access to words and definitions, but they often lacked the contextual examples and word associations typically found in comprehensive dictionary entries. For instance, while apps like Duolingo provide a quick definition of a word, they often do not offer rich semantic networks (e.g., synonyms, antonyms) or cultural context in the way traditional dictionaries do.

Additionally, the user interfaces of many digital tools favored speed and efficiency over depth. This design focus contributed to learners' reliance on immediate feedback, reducing the cognitive engagement necessary for deep processing (Craik & Lockhart, 1972).

Table 1.

Survey Findings on Digital Language Tools

| Aspect | Percentage of Learners |
|-------------------------------------|------------------------|
| Regular Usage of Digital Tools | 90% |
| Daily Use (Multiple Times) | 75% |
| Primary Focus on Learning New Words | 65% |
| Use for Review and Retention | 45% |

| | |
|---|-----|
| Perceived Effectiveness for New Words | 80% |
| Perceived Depth in Contextual Understanding | 40% |

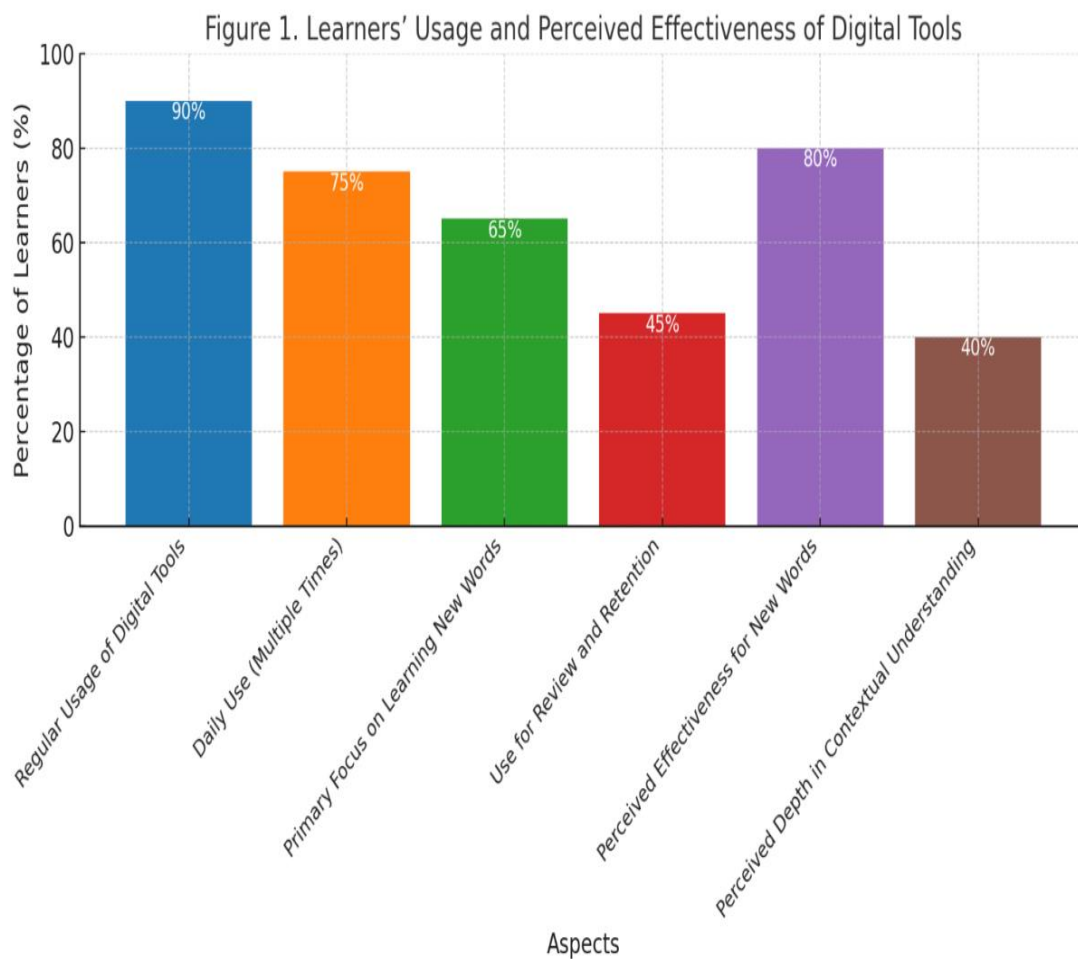


Figure 1 reveals Learners' Usage and Perceived Effectiveness of Digital Tools Graph, representing data visually, showing the percentage distribution for each aspect in Table 1.

Interview Insights

In-depth interviews with 15 learners provided qualitative insights into their experiences with digital tools and traditional methods for vocabulary acquisition.

Breadth vs. Depth

Participants reported that digital tools facilitated the rapid acquisition of a broad vocabulary. However, they acknowledged a lack of depth, particularly in understanding the nuances of word usage. One learner stated, *"I learn many new words every day on Duolingo, but I don't always remember how to use them in real conversations."* Conversely, traditional dictionaries were perceived as time-consuming yet more effective for deep learning. Learners appreciated the additional examples and associations provided by traditional methods, which enhanced retention and contextual understanding.

Engagement and Motivation

Learners consistently highlighted the engaging features of digital tools, particularly gamification. One participant remarked, *"It's fun to earn points and unlock new levels. It makes learning feel like a game."* However, many expressed that the novelty of gamification diminished over time, prompting a need for more substantive and contextual learning materials.

Educator Perspectives

Interviews with 10 educators reinforced the learners' observations. While teachers acknowledged the efficiency of digital tools in introducing vocabulary, they expressed concerns about their inadequacy in preparing learners for real-world applications. A teacher noted, *"Students learn words quickly, but they don't always know how to use them outside the app, especially in social or cultural contexts."*

Table 2 Summary of Key Interview Themes

| Theme | Learner Perspective | Educator Perspective |
|---------------------------|---|--|
| Breadth vs. Depth | Rapid acquisition but limited retention | Useful for initial exposure but insufficient for depth |
| Engagement and Motivation | Gamification encourages learning but lacks long-term appeal | Engaging but insufficient for sustained vocabulary depth |

| | | |
|--------------------------------------|--|--|
| Contextual and Cultural Relevance | Lacking social and cultural Dimensions | Tools fail to address real-world language applications |
|--------------------------------------|--|--|

Focus Group Findings

Learner Focus Groups:

During focus group discussions, learners consistently identified digital tools as a convenient means of expanding vocabulary. However, they expressed difficulties in spontaneous word usage during conversations. One learner remarked, "I know the words from the app, but when I try to use them in a conversation, it's like my brain freezes."

Teacher Focus Groups:

Teachers also emphasized the limitations of digital tools in providing contextual guidance. A common sentiment was that digital platforms often failed to address the situational appropriateness of words, such as distinguishing formal from informal usage.

Document Analysis:

An analysis of teaching materials and digital tool interfaces provided additional insights into the strengths and limitations of these tools. Digital platforms were found to prioritize speed and simplicity, often omitting essential semantic networks such as synonyms, antonyms, and cultural connotations. In contrast, traditional resources offered richer examples and associations, supporting deeper learning.

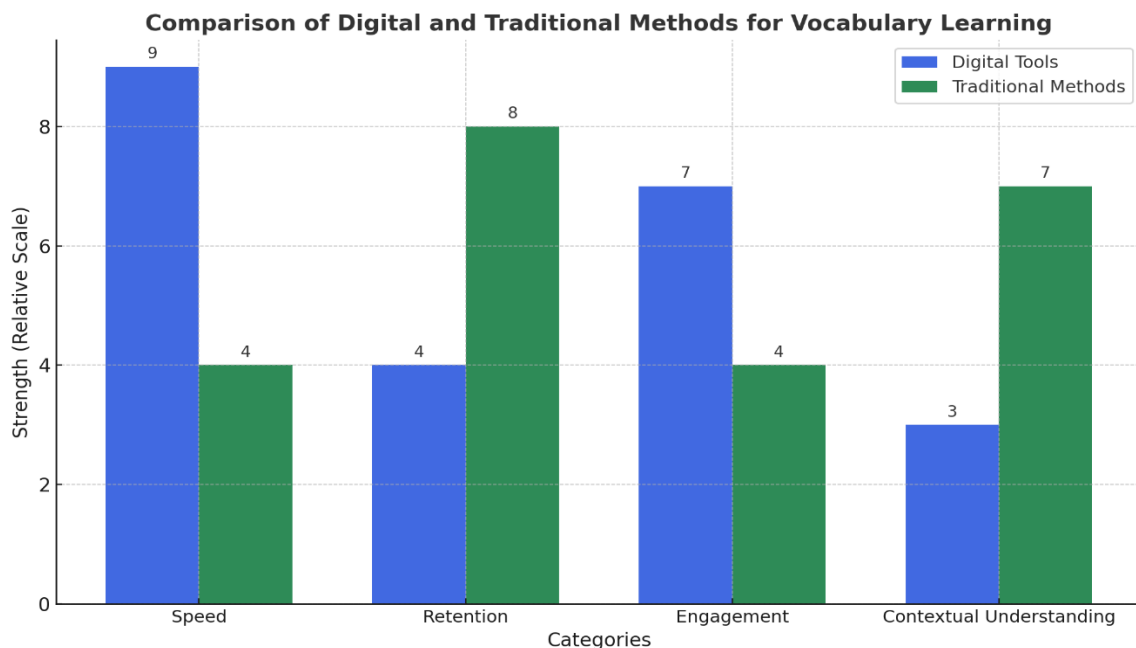


Figure 2. A bar chart comparing the strengths of digital tools and traditional methods in areas such as speed, retention, engagement, and contextual understanding.

Discussion of Findings

The findings of this study revealed key insights into the use of digital tools and traditional methods for vocabulary learning, highlighting their respective strengths and limitations. These results emphasize the need for a blended approach to enhance vocabulary acquisition and overall language proficiency.

Survey data underscores the widespread reliance on digital tools, with 90% of participants regularly using them for vocabulary learning. The majority of learners appreciated the convenience and speed offered by these tools, with 75% using them multiple times daily and 80% finding them effective for learning new words quickly. However, only 40% of respondents felt that digital tools supported contextual or cultural understanding. This suggests that while digital tools are efficient for initial vocabulary acquisition, they often lack depth, a finding consistent with research emphasizing their focus on accessibility and gamified engagement over deeper learning.

Interviews with learners and educators further highlighted a dichotomy between breadth and depth in vocabulary acquisition. Learners noted that digital tools enable the rapid acquisition of a wide range of vocabulary but struggle to provide the nuanced understanding required for real-world use. As one learner explained, “I learn many new words every day on Duolingo, but I don’t always remember how to use them in real conversations.” Conversely, traditional methods, such as dictionaries, were valued for offering rich examples and semantic associations that support retention and contextual comprehension. Educators agreed, pointing out that while digital tools are excellent for introducing new words, they often fail to prepare learners for practical application in social or cultural settings. Nagy and Townsend (2012), argues that vocabulary acquisition should not only focus on breadth but also on the depth of understanding, including semantic relationships and pragmatic usage. Similarly, Schmitt and McCarthy (1997) emphasize that digital tools often present vocabulary in isolation, limiting learners’ ability to see how words interact within sentences or broader linguistic structures.

A key theme emerging from the data was the role of gamification in maintaining learner engagement. Seventy percent of survey respondents found features such as points and badges motivating. However, learners and educators both observed that the novelty of gamification tends to diminish over time, leading to reduced engagement. This highlights the need for digital tools to go beyond surface-level gamification and include more substantive, context-rich content that fosters sustained interest and deeper learning agreeing with Nakiyemba (2024) and Wei (2024) who argues that gamification initially motivates learners but does not necessarily sustain long-term engagement.

A recurring challenge identified across all data sources was the lack of contextual and cultural depth in digital tools. Learners often struggled with using vocabulary spontaneously in conversations, citing insufficient guidance on situational and cultural appropriateness. Educators echoed these concerns, emphasizing the importance of contextual examples, formal versus informal distinctions, and pragmatic usage. Traditional methods, such as classroom discussions and comprehensive dictionary entries, were noted for addressing these gaps effectively, offering learners a more complete understanding of word meanings and applications. this supports the claim of Nied-Curcio (2022) who found that foreign language learners frequently misunderstand words due to inadequate contextual support in digital platforms.

To address these limitations, a blended approach combining digital tools and traditional methods is recommended. Digital tools excel in providing quick access to vocabulary and fostering engagement, while traditional methods offer

deeper learning through richer examples and contextual understanding. By leveraging the strengths of both, educators can create a more holistic vocabulary learning experience that supports both breadth and depth as agreed by Ezeh, Anyanwu, and Onunkwo (2022). Similarly, developers of digital tools should focus on enhancing their content by incorporating features such as semantic networks, situational examples, and cultural notes, thereby improving their effectiveness for comprehensive language learning.

Conclusion

The findings of this study demonstrate the complementary strengths of digital tools and traditional methods in vocabulary learning. While digital tools offer convenience, speed, and engagement, traditional methods provide the depth and contextual understanding necessary for true language mastery. A hybrid approach that leverages the benefits of both can create a more comprehensive and effective vocabulary learning experience. Educators and developers alike must work together to address the limitations of current practices, ensuring that learners are equipped with the tools and strategies needed for success in both academic and real-world language use.

Recommendations

Based on the findings from the study, the following recommendations were made

1. Language educators should design curricula that combine the strengths of digital tools and traditional methods. For instance, digital tools can be used for initial vocabulary exposure and practice, while traditional methods can provide the deeper context and cultural understanding needed for mastery.
2. Developers of digital tools should focus on incorporating features that promote deep learning, such as semantic networks, situational examples, and cultural connotations. Gamification elements should be augmented with context-based activities to sustain engagement and support deeper comprehension.
3. Professional development programs for language educators should include training on how to effectively integrate digital tools with traditional resources. This will ensure that teachers can maximize the benefits of both approaches.
4. Learners should be encouraged to engage in active learning techniques, such as creating personalized vocabulary journals, engaging in discussions, and applying new words in authentic contexts. These strategies can help bridge the gap between digital efficiency and traditional depth.
5. Further studies should explore the long-term impacts of blended approaches on vocabulary retention and language proficiency. Such research will provide

valuable insights into how digital and traditional methods can be optimized for sustained learning outcomes.

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