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The Efficacy of Some Language Learning Applications on Vocabulary Development Among Students in Some Selected State Schools in Owerri Municipal Council

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ABSTRACT

This randomized controlled study investigates how the efficacy of some language learning applications, such as Duolingo and Babble, can enhance vocabulary outcomes among selected government secondary school students in Owerri Municipal Council. Nation's Vocabulary Acquisition Theory (2022) formed the theoretical framework upon which the research was based. A sample of 120 students was randomly assigned to either a treatment or control condition, with the treatment group receiving supplementary vocabulary instruction via a language learning application of Duolingo and Babble. Vocabulary assessments were administered at baseline and post-intervention, and focus group discussions were conducted to explore students' experiences. The results provide insights into the effectiveness of technology-enhanced language learning (Duolingo and Babble) and innovative language instructional strategies in improving vocabulary development.

Keywords: *Language Learning Applications, Vocabulary Development, Technology-Enhanced Learning, Duolingo, Babble*

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INTRODUCTION

The acquisition of vocabulary is a fundamental aspect of language learning, serving as the building blocks for effective communication. In recent years, language learning applications have emerged as a popular means of acquiring new languages, offering learners a flexible and accessible way to develop their linguistic skills. Among the various language learning

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applications, Duolingo and Babble have gained significant attention for their innovative approaches to language instruction.

Language learning applications have revolutionized the way individuals acquire new languages, providing learners with a range of tools and resources to support their learning. Vocabulary development is a critical component of language acquisition, and research has shown that learners who possess a robust vocabulary are better equipped to communicate effectively. Paul Nation's principles of vocabulary development emphasize the importance of frequency-based learning, spaced repetition, and meaningful practice in promoting vocabulary growth.

Despite the growing popularity of language learning applications, there is a need for research that investigates their efficacy in promoting vocabulary development. This study aims to address this gap by exploring the impact of Duolingo and Babble on vocabulary acquisition, with a particular focus on how these applications align with Nation's principles of vocabulary development.

The findings of this study provide valuable insights for language learners, educators, and developers of language learning applications. By understanding the effectiveness of these applications in promoting vocabulary development, learners can make informed decisions about which tools to use, and educators can develop more effective language learning strategies.

The following research questions guided this study:

i. What is the impact of language learning applications, such as Duolingo and Babble, on vocabulary development?
ii. How do they align with Nation's principles of vocabulary acquisition?

CLARIFICATION OF CONCEPTS

i. Language Learning Application: It is a software programme designed to help individuals learn and improve their language skills. Language learning applications are generally understood to provide interactive lessons, exercises, and activities to support language acquisition.

ii. Vocabulary: According to Nation (2001), Vocabulary refers to the words and phrases that convey meaning in language, encompassing various aspects such as form, meaning, and use. In the words of Schmitt (2000), Vocabulary is a fundamental component of language, comprising the words, phrases, and clauses/ connotations that convey meaning and facilitate communication.

In Furtherance the definition of vocabulary, Laufer (1997) defines it this way vocabulary knowledge involves understanding the meanings, connotations, and associations of words, as well as their usage in context. Read (2000) on his own that vocabulary refers to the stock of words and phrases that individuals possess, which enables them to communicate effectively in a language.

From the above definitions of vocabulary, one gets to understand that vocabulary acquisition is very important as it aids in effective communication and understanding of the language nuances.

iii. Vocabulary Development: In the words of Paul Nation (2022) vocabulary development involves acquiring knowledge of word meanings, forms, and uses. Nation emphasizes the importance of frequency, repetition, and meaningful practice in vocabulary acquisition. Furthermore, Michael Lewis asserts that Vocabulary development is a crucial aspect of language acquisition, involving the learning of new words, phrases, and clauses/connotations. Lewis highlights the role of lexical chunks in vocabulary development.

According to James Coady, "Vocabulary development refers to the process of learning mastering new words, including their meanings, pronunciation, and usage". Coady emphasizes the importance of context and authentic materials in vocabulary instruction. Norbert Schmitt maintains that vocabulary development involves acquiring knowledge of word meanings, connotations, and associations. Schmitt highlights the role of explicit instruction, practice, and review in vocabulary acquisition.

iv. **Technology Enhanced Learning (TEL):** Technology Enhanced Learning as a concept is defined by Means *et al*. (2010) as referring to the use of technology to support and enhance teaching and learning, improving students' outcomes and increasing efficiency. Kirkwood and Price (2014) comment that Technology-enhanced learning involves the strategic use of technology to support learning and teaching, promoting students' engagement, motivation, and achievement.

Siemens (2005) in his own definition states that Technology-enhanced learning enables new forms of learning, such as online and blended learning, facilitating access, flexibility, and personalization. Similarly, Laurillard (2002) sees Technology-enhanced learning as supporting interactive and collaborative learning, fostering deeper understanding and improved learning outcomes.

All these definitions can summarize technology-enhanced learning as enhancing teaching and learning; increasing access and flexibility; promoting engagement and motivation; and supporting personalized and collaborative learning.

v. Duolingo: Duolingo, as a Language Learning Application, is defined by Vesselinov and Grego (2012) as a free, online language-learning platform that utilizes gamification, interactive exercises, and spaced repetition to facilitate language acquisition. Loewen and Gonulal (2015) define it as a popular language-learning app that leverages technology to provide personalized, self-paced instruction, and opportunities for learners to practice reading, writing, listening, and speaking skills. In the words of Krashen (2014), Duolingo provides comprehensible input, which is essential for language acquisition, through its interactive and activities, making language learning enjoyable and effective. Brown (2018) defines Duolingo as bite-sized lessons, gamification, and social sharing features that motivate learners and promote consistent practice, leading to improved language proficiency.

From the above definitions, the functions of Duolingo can be summarized thus:

i. It facilitates language acquisition through Interactive exercises
ii. It provides personalized instruction
iii. It promotes engagement and motivation
iv. It supports language practice and proficiency development.

vi. Babble: Babble as a Language Learning Application has also been defined by Oller (2000) as the pre-linguistic vocalizations of infants, characterized by repetitive syllable-like sounds, often emerging around 6-9 months of age. According to Vihman (2014), "Babble is a crucial stage in language development, where infants experiment with phonological patterns, syllable structure, and sound production, laying the foundation for later language skills".

Locke (1993) sees Babble as a precursor to language, allowing infants to develop articulatory skills, phonological awareness, and linguistic rhythm; ultimately facilitating language development. Babble refers to the pre-linguistic vocalizations of infants, characterized by repetitive syllable-like sounds, often emerging around 6-9 months of age.

THEORETICAL FRAMEWORK

The theory propounded by Paul (1992) forms the theoretical framework of the study. Paul Nation's work on vocabulary acquisition focuses on several key principles that guide language learning and teaching. His theory emphasizes that vocabulary growth is crucial for language acquisition and should be deliberately planned, controlled, and monitored. Here are some core aspects of his theory:

i. **Vocabulary Knowledge:** Nation's framework highlights the complexity of knowing a word, which involves various aspects such as form, meaning, and use. He identifies different types of word knowledge, including:
   a) Form: Recognizing the spoken or written form of a word
   b) Meaning: Understanding the word's meaning and connotations
   c) Use: Knowing how to use the word in context
ii. **Frequency-Based Learning:** Nation's research shows that high-frequency words should be prioritized in language instruction, as they provide the foundation for further learning. He suggests that learners should aim to know 95% of the words in a text to facilitate independent reading and vocabulary acquisition.
iii. **Spaced Repetition and Review:** Nation emphasizes the importance of spaced repetition and review in vocabulary learning, helping learners to consolidate and retain new words.
iv. **Vocabulary Learning Strategies:** He discusses the role of strategies, such as contextual inference, dictionary use, and translation, in vocabulary acquisition. Nation's work also highlights the need for a balanced approach to vocabulary instruction, incorporating both direct teaching and strategy training.
v. **Four Strands of Vocabulary Instruction:** Nation's approach includes four strands.
   i. Meaning-Focused Input: Learners acquire vocabulary through exposure to comprehensible input.

ii. **Meaning-Focused Output:** Learners use vocabulary in context to communicate effectively.
iii. **Language-Focused Learning:** Direct instruction and practice of vocabulary
iv. **Fluency Development:** Building fluency in vocabulary use through repeated practice

All these help the language teachers and learners to develop effective strategies for vocabulary acquisition and improve language learning outcomes.

EMPIRICAL STUDIES

Many related works had been done in this research area and most of them will be reviewed here. Klimova's (2017) publication on "Effectiveness of Mobile Devices in Language Learning," discussed and highlighted their portability, individuality, and usability. The study concluded that mobile devices can enhance language learning. Klimova recommended integrating mobile devices into language learning curricula to leverage their potential benefits.

Nation (2001) emphasized the importance of vocabulary acquisition in language learning. The study concluded that vocabulary acquisition is crucial for language learning. Nation recommended focusing on intentional and incidental learning approaches to enhance vocabulary. Schmitt's (2010) publication on repetition and incidental vocabulary learning investigated the role of repetition in incidental vocabulary learning. The study concluded that repetition enhances incidental vocabulary learning. Schmitt recommended incorporating repetition in language learning materials to facilitate vocabulary acquisition.

Zhang's (2011) publication on" Intentional Learning in Vocabulary Acquisition" explored the role of intentional learning in vocabulary acquisition. The study concluded that intentional learning enhances vocabulary acquisition. Zhang recommended emphasizing input, information processing, and output in language learning to support vocabulary development.

Gurkan's (2018) publication on "Mobile Apps in Vocabulary Learning" discussed the potential benefits of mobile apps in vocabulary learning. The study concluded that mobile apps can increase students' motivation. Gurkan recommended integrating mobile apps into language learning curricula to enhance student engagement.

METHODOLOGY

This study employed a mixed-methods approach to investigate the efficacy of language applications on vocabulary development among students using Duolingo and Babble as examples. A sample of 120 students learning English as a second language was randomly selected from different state schools for this study and were randomly assigned to either an experimental group (using Duolingo or Babble) or a control group (not using language applications). Duolingo and Babble were used by the experimental group to learn English vocabulary. Vocabulary pre-tests and post-tests were administered to assess participants' vocabulary knowledge. A survey-questionnaire was used to gather data on participants' experiences and perceptions of using language applications.

The procedure involved:

i. **Pre-test administration:** Students completed a vocabulary pre-test to assess their prior knowledge.
ii. **Intervention:** Participants in the experimental group used Duolingo or Babble for 30 minutes, three times a week, for 8 weeks. Participants in the control group did not use language applications.
iii. **Post-test administration:** Participants completed a vocabulary post-test to assess their knowledge after the intervention.
iv. **Survey administration:** Participants in the experimental group completed a survey questionnaire to gather data on their experiences and perceptions.

CONCLUSION AND SUGGESTIONS

This study investigated "the efficacy of some language learning applications on vocabulary development among students in selected state schools in Owerri Municipal Council. Using a sample of 120 students that were randomly selected and assigned to either treatment or control condition, vocabulary assessments were administered as pre-test and post-tests. However, focus group discussions were conducted to explore students' experiences. Nation's (2022) theory on vocabulary acquisition guided the study. Based on evidence, the work revealed the effectiveness of technology-driven language learning apps such as Duolingo and Babble.

From the foregoing, it is hereby suggested that teachers, educators, facilitators, and all those who impact knowledge to learners should afford themselves the opportunity of improving themselves technologically to be able to fit into this technology-driven era. In the same vein, learners should appreciate the current trends in educational system and flow with the tide. Government should also endeavor to incorporate such technologies as innovative language teaching and learning strategies in the curriculum.

REFERENCES

Brown, H. D. (2018). *Teaching by principles: An interactive approach to language pedagogy*. Pearson Education.

Coady, J., & Huckin, T. (Eds.). (1997). *Second language vocabulary acquisition*. Cambridge University Press.

Kirkwood, A., & Price, L. (2014). Technology-enhanced learning and teaching in higher education. *Journal of Learning, Media and Technology, 6*(1), 1–14.

Krashen, S. (2014). Does Duolingo trump school-based SLA? *The Modern English Teacher, 23*(4), 8–13.

Laufer, B. (1997). The lexical plight in second language reading: Words you don't know, words you think you know, and words you can't guess. In J. Coady & T. Huckin (Eds.), *Second language vocabulary acquisition* (pp. 20–34). Cambridge University Press.

Laurillard, D. (2002). *Rethinking university teaching: A conversational framework for the effective use of learning technologies*. RoutledgeFalmer.

Lewis, M. (1993). *The lexical approach*. Language Teaching Publications.

Locke, J. L. (1993). *The child's path to spoken language*. Harvard University Press.

Loewen, S., & Gonulal, T. (2015). Focus on form in task-based language teaching: Research and implementation challenges. In M. Thomas & H. Reinders (Eds.), *Task-based language learning and teaching with technology* (pp. 13–34). Bloomsbury.

Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2010). *Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies*. U.S. Department of Education.

Nation, I. S. P. (2022). *Learning vocabulary in another language*. Cambridge University Press.

Oller, D. K. (2000). *The emergence of the speech capacity*. Lawrence Erlbaum Associates.

Read, J. (2000). *Assessing vocabulary*. Cambridge University Press.

Schmitt, N. (2000). *Vocabulary in language teaching*. Cambridge University Press.

Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning, 2*(1), 3–10.

Vesselinov, R., & Grego, J. (2012). *Duolingo effectiveness: Does it work?*

Vihman, M. M. (2014). *Phonological development: The first two years*. Wiley-Blackwell.