

A Study on Students' Perceptions of Digital Sandbox Games for English Vocabulary

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Abstract

This study investigates junior high school students' perceptions of using digital sandbox games to improve their English vocabulary. As traditional rote memorization methods often fail to engage "digital native" learners, this research explores the potential of popular commercial games like *Minecraft* and *Roblox* as supplementary educational tools. Guided by theories of second language acquisition (Krashen, 1982; Vygotsky, 1978) and self-determination (Deci & Ryan, 1985), this descriptive study used a quantitative approach with a purposeful sample of 67 students from a specific institution. Data was collected through a Likert-scale questionnaire. The findings reveal that students hold a positive attitude towards game-based learning and perceive these games as effective tools for vocabulary mastery, especially due to their immersive and interactive features. While the games were seen as effective for understanding and remembering new words, students did report challenges, primarily the lack of school support for game-based learning. The results suggest that digital sandbox games can be a valuable, student-centered tool for enhancing vocabulary acquisition, and the study contributes to the limited research on the use of commercial games for formal education among this specific demographic.

Keywords: Digital Games, Sandbox Games, Vocabulary Acquisition, Student Perceptions, Game-Based Learning.

Introduction Digital Games, Sandbox Games, Vocabulary Acquisition, Student Perceptions, Game-Based Learning.

Mastery of vocabulary is fundamental to language proficiency (Nation, 2001). However, traditional methods of vocabulary instruction, such as rote memorization and word lists, often lack the contextual depth and interactive

elements necessary to engage adolescent learners. This can create a significant disconnect between a student's academic understanding and their ability to apply language in practical contexts. In the digital age, a new pedagogical opportunity has emerged with the rise of "digital natives" who are fluent in a technology-rich environment. Language acquisition theories, such as Krashen's Input Hypothesis (1982) and Vygotsky's Sociocultural Theory (1978), emphasize the importance of meaningful interaction and contextualized input, which aligns with the immersive nature of digital games.

The digital sandbox game genre, characterized by its open-world settings and player-driven narratives, offers a particularly compelling case for language education. Games like *Minecraft* and *Roblox* provide players with the autonomy to explore, build, and interact in a creative, collaborative environment. This player-centered design fosters intrinsic motivation (Deci & Ryan, 1985), which can enhance learning attitudes and outcomes (Oktavia et al., 2023). In these environments, vocabulary learning becomes an incidental process, as players encounter new terms related to game mechanics, items, and communication with other players (Reinders & Wattana, 2014).

While the integration of digital games in the classroom has been a growing area of interest, research has often focused on purpose-built educational games or "gamified" applications. The pedagogical value of commercial, off-the-shelf sandbox games, particularly from the perspective of the learners themselves, remains an under-researched area. This study seeks to address this gap by investigating the perceptions of junior high school students regarding the use of digital sandbox games as a tool for English vocabulary acquisition. By examining student attitudes, perceived effectiveness, and the specific game features they find most helpful, this research aims to provide valuable insights for educators and curriculum developers on how to leverage students' existing digital interests to create more engaging and effective learning experiences. The research questions guiding this study are:

1. What are junior high school students' attitudes toward the use of digital sandbox games for vocabulary mastery?
2. To what extent do students perceive digital sandbox games as effective tools for supporting vocabulary mastery?
3. What are the students' challenges or barriers in using sandbox games as a medium for vocabulary mastery?
4. What aspects of digital sandbox games do students find most engaging or helpful for vocabulary acquisition?

Methods

This study employed a descriptive quantitative research design to investigate the perceptions of junior high school students. The research was conducted with a purposeful sample of 67 students from SMPIT Bina Insani Kediri. The primary data collection instrument was a questionnaire utilizing a five-point Likert scale, ranging from "Strongly Disagree" to "Strongly Agree," to measure student attitudes, perceived effectiveness, challenges, and engaging game features. The questionnaire was structured into four main sections corresponding to the research questions.

The collected data was analyzed using descriptive statistical measures, including frequency distributions, percentages, mean scores, and standard deviations. These statistical tools were used to describe and summarize the students' responses, providing a clear picture of their perceptions. The mean scores were particularly useful for indicating the overall sentiment of the group on each item.

Results and Discussion

The results of this study are organized into four sections based on the research questions, and are discussed in relation to relevant literature and theories.

Student Attitudes

The descriptive analysis shows that students generally have a positive view of using digital sandbox games to acquire English vocabulary. The mean scores for attitude-related items, such as the suitability of sandbox games for school learning, were predominantly on the "agree" side of the scale. This finding aligns with the research by Sahensolar and Marpaung (2024), which found that university students regarded online games as fascinating and effective for vocabulary learning due to their interactive and immersive characteristics. This positive attitude is a crucial factor, as previous studies have shown that a happy disposition can enhance participation, motivation, and educational outcomes (Oktavia et al., 2023). This positive sentiment is likely linked to the fulfillment of the psychological needs of autonomy, competence, and relatedness, as described by Self-Determination Theory (Deci & Ryan, 1985), which is a core tenet of the sandbox game genre.

Perceived Effectiveness of Digital Sandbox Games for Vocabulary Mastery

Students generally perceived digital sandbox games as effective tools for

vocabulary acquisition. Mean scores for items like "I learn new English words when playing sandbox games" and "Sandbox games help me understand the meaning of new vocabulary" were high, indicating strong agreement. This supports the theoretical underpinnings of Krashen's Input Hypothesis (1982), where learners acquire language by encountering comprehensible input in a meaningful context. The immersive, visual, and interactive nature of these games provides a rich context for students to infer the meaning of new words without explicit instruction. This finding is consistent with research by Reinders and Wattana (2014), who demonstrated that game-based activities can facilitate incidental vocabulary learning. However, students' perceived ability to use the learned vocabulary in daily conversation received a lower mean score, suggesting that while the games aid in recognition and comprehension, they may not be sufficient for promoting active production of language.

Students' Challenges and Barriers

The study found that students perceived modest challenges and barriers, with mean scores generally falling in the "neutral" to "agree" range. The most significant barrier identified was "My school does not endorse the incorporation of games in the classroom." This points to a systemic issue where pedagogical innovation, even when positively received by students, is often hindered by traditional teaching methods and curriculum restrictions (Gee, 2007). Other challenges included the difficulty of retaining vocabulary learned from games, which is a finding similar to that of Reinders and Wattana (2014) who highlighted the need for intentional scaffolding to connect game-based learning with classroom goals.

Engaging Game Features for Vocabulary Acquisition

Students identified several specific features of digital sandbox games that they found particularly helpful. The highest-rated items included "Talking or chatting with other players helps me practice English" and "I learn more when I explore or build things in English in the game." These results strongly align with Vygotsky's Sociocultural Theory (1978), which posits that learning is a social process. The collaborative nature of multiplayer games creates a genuine and meaningful context for language use, allowing more proficient players to provide scaffolding for their peers in the Zone of Proximal Development. The low-stress environment and the use of visuals were also highly rated, which reinforces the importance of an affective filter (Krashen, 1982) and contextual cues in the learning process.

Conclusion

This research concludes that junior high school students have a positive perception of using digital sandbox games for English vocabulary acquisition. They find these games to be effective, engaging, and motivating tools for learning. The study provides evidence that the immersive, collaborative, and autonomous nature of the sandbox genre, as exemplified by games like *Minecraft* and *Roblox*, aligns well with established theories of second language acquisition. While students believe these games are effective for understanding and remembering new words, a key challenge remains in transferring this knowledge into active daily conversation. Furthermore, institutional and pedagogical support for integrating these tools into the formal curriculum is a significant barrier.

The findings have important implications for educators, curriculum developers, and future researchers. Teachers can leverage students' existing interests to create more engaging and effective vocabulary instruction. Curriculum developers may consider integrating commercial games as valuable, student-centered learning tools. Future research should focus on developing pedagogical frameworks for integrating sandbox games into formal education, exploring the long-term impact on students' language production, and investigating the effectiveness of this approach in different cultural and educational contexts.

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