

THE EFFECTIVENESS OF GAME-BASED LANGUAGE TEACHING ON VOCABULARY ACQUISITION AND LANGUAGE PROFICIENCY: AN EXPERIMENTAL STUDY

BY

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Abstract

This study examines the effectiveness of game-based language teaching on vocabulary acquisition and language proficiency. The primary aim is to evaluate how game-based learning enhances language learners' engagement, motivation, and fluency compared to traditional teaching methods. The study employs the Sociocultural Theory (Vygotsky, 1978) as the theoretical framework, emphasising the role of interaction and social learning in language development. A mixed-methods research design was adopted, combining both qualitative and quantitative approaches. Participants were divided into an experimental group receiving game-based instruction and a control group following traditional teaching methods. Data were collected through pre-tests and post-tests, surveys, and classroom observations over a 12-week period. Statistical analyses, including t-tests, were conducted to determine the significance of differences between the two groups. The findings indicate that game-based language teaching significantly improves vocabulary acquisition, grammar proficiency, and learner engagement. The experimental group demonstrated a 33.3% increase in proficiency, with notable enhancements in motivation and fluency. The study corroborates previous research by Gee (2007) and García-Carbonell et al. (2017), highlighting the benefits of interactive and immersive learning environments. Based on these findings, the study recommends the integration of game-based learning into language curricula, teacher training on gamification strategies, the development of culturally relevant educational games, and the use of digital tools to enhance interactive learning. Future research should explore the long-term effects of game-based learning on language retention and cross-cultural language acquisition.

Keywords: game-based learning, language acquisition, vocabulary development, sociocultural theory, learner engagement, motivation, fluency.

Introduction

Language learning and teaching have undergone significant transformations in recent years, driven by advances in technology and cognitive psychology. One of the most promising approaches to language instruction is game-based learning, which leverages the engaging and interactive nature of games to facilitate language acquisition (Gee, 2007; Shute, 2008). Research has shown that game-based learning can enhance language learners' motivation, enjoyment, and overall proficiency (Hamari et al., 2014; Rama et al., 2012). In Nigeria, a remarkable example of game-based language teaching has been observed in the traditional Yoruba teaching method. This approach utilizes a sequential end-letter system, where learners are encouraged to create words by adding prefixes or suffixes to existing words, based on the last letter of the previous word. For instance, in Yoruba, the sequence "Kinijẹ a, Adeolu Kinijẹ Lu Lukumann Kinijẹ man Manlade Kinijẹ de Dekunle Kinijẹ le" demonstrates how learners can generate new words by building on the last letter of the previous word. This approach has been remarkably effective, enabling even 4-year-old children to become fluent in Yoruba. The success of this traditional Yoruba teaching method highlights the potential of game-based learning for language instruction. By incorporating elements of play and interaction, language learners can develop a more engaging and effective learning experience. This is particularly important in today's digital age, where learners are increasingly accustomed to interactive and immersive experiences (Prensky, 2001).

However, the rise of AI-powered language learning tools also poses significant challenges for traditional language teaching methods. As AI systems become increasingly sophisticated, there is a risk that they may displace human teachers and diminish the importance of social interaction in language learning (Fryer et al., 2019). To address this challenge, it is essential to develop innovative language teaching methods that incorporate elements of play, interaction, and social learning. This study aims to explore the potential of game-based language teaching methods, inspired by the traditional Yoruba approach, to enhance language learners' proficiency and engagement. By examining the effectiveness of this approach and its potential applications in modern language teaching, this study seeks to contribute to the development of innovative and effective language teaching methods that can meet the challenges of the digital age.

Research Questions

1. Can game-based language teaching improve language learners' vocabulary acquisition and grammar skills compared to traditional teaching methods?
2. How does game-based language teaching affect language learners' motivation and engagement in language learning compared to traditional teaching methods?
3. What are the effects of game-based language teaching on language learners' language proficiency and fluency compared to traditional teaching methods?

Literature review

Game-Based Language Teaching and Playing Language Learning

Game-based language teaching refers to the use of games and play to facilitate language learning (Gee, 2007; Shute, 2008). Playing language learning, on the other hand, involves the use of playful activities and tasks to promote language learning (Lantolf, 2000). Research has shown that game-based language teaching can improve language learners' vocabulary acquisition, grammar, and pronunciation (Rama et al., 2012; García-Carbonell et al., 2017). Moreover, game-based language teaching can promote language learners' autonomy, self-directed learning, and collaboration (Bryson & Hand, 2007; Mawlawi, 2016). For instance, language learners can work together to complete language-based tasks and challenges, promoting teamwork and communication (Hamari et al., 2014). Additionally, game-based language teaching can provide an immersive and interactive environment for language learners, allowing them to practice language skills in a more enjoyable and effective way (García-Carbonell et al., 2017).

Recent studies have also explored the use of virtual reality (VR) and augmented reality (AR) in game-based language teaching (Wouters et al., 2013; Chen et al., 2017). For example, a study by Chen et al. (2017) found that VR-based language learning can improve language learners' pronunciation and listening skills. Another study by García-Carbonell et al. (2017) found that AR-based language learning can enhance language learners' vocabulary acquisition and grammar skills. Furthermore, game-based language teaching can be adapted to various language learning contexts, including formal and informal settings (Mawlawi, 2016). For instance, language teachers can incorporate games and play into their classroom instruction, while language learners can engage in online gaming communities or language exchange programs (García-Carbonell et al., 2017).

Cultural and Peer Influence in Language Development

Cultural influence refers to the impact of cultural factors, such as values, beliefs, and norms, on language learners' language development (Gardner, 1985; Norton, 2000). Peer influence, on the other hand, refers to the impact of language learners' peers, such as classmates, friends, and family members, on their language development (Lantolf,

2000). Research has shown that cultural and peer influence can play a significant role in language learners' language development, shaping their language learning outcomes and motivation (Kramsch, 1998; Dörnyei, 2005).

Moreover, cultural and peer influence can intersect and interact in complex ways, shaping language learners' language development trajectories (Kramsch, 1998). For instance, language learners' cultural backgrounds can influence their peer relationships and interactions, which in turn can impact their language learning outcomes (Toohey, 2000). Recent studies have also explored the role of social media and online communities in shaping language learners' cultural and peer influence (Kabilan et al., 2010; Chen et al., 2017). Cultural influence can also shape language learners' language learning strategies and goals (Gardner, 1985). For example, language learners from collectivist cultures may prioritize group harmony and cooperation, while those from individualist cultures may focus on personal achievement and competition (Hofstede, 2001). Additionally, cultural influence can impact language learners' motivation and engagement, with some cultures placing a greater emphasis on language learning as a means of social mobility (Norton, 2000). Furthermore, peer influence can play a significant role in shaping language learners' language development, particularly in informal language learning contexts (Lantolf, 2000). For instance, language learners may engage in language exchange programs or online gaming communities, where they interact with peers who share similar language learning goals and interests (García-Carbonell et al., 2017).

Yoruba Game-Playing Teaching: The Sequential End-Letter System and Its Application in English

The traditional Yoruba teaching method, rooted in the sequential end-letter system, exemplifies the power of play-based language acquisition. This approach involves learners creating new words by building on the last letter of a preceding word. Through this simple yet highly effective game, children as young as four develop fluency in Yoruba by engaging in a dynamic and collaborative learning experience.

Yoruba Sequential End-Letter System

The Yoruba end-letter system, which builds new words from the last letter of the previous word, has proven highly effective in fostering fluency, especially among children. Below are additional examples to enrich learners' experiences

Yoruba Sequential End-Phoneme Chain (A-Z)

- | | |
|----------------------------|---------------------------|
| 1. Kiniḡ /a/ | 16. Leke (/ke/) |
| 2. Adeolu (/u/) | 17. Kiniḡ /ke/ |
| 3. Kiniḡ /u/ | 18. Kehinde (/de/) |
| 4. Lukmann (/n/) | 19. Kiniḡ /de/ |
| 5. Kiniḡ /man/ | 20. Demola (/la/) |
| 6. Manlade (/de/) | 21. Kiniḡ /la/ |
| 7. Kiniḡ /de/ | 22. Lamide (/de/) |
| 8. Durojaiye (/ye/) | 23. Kiniḡ /de/ |
| 9. Kiniḡ /ye/ | 24. Deji (/ji/) |
| 10. Yetunde (/de/) | 25. Kiniḡ /ji/ |
| 11. Kiniḡ /de/ | 26. Jimoh (/oh/) |
| 12. Damilola (/la/) | 27. Kiniḡ /oh/ |
| 13. Kiniḡ /la/ | 28. Oluwole (/le/) |
| 14. Ladele (/le/) | 29. Kiniḡ /le/ |
| 15. Kiniḡ /le/ | 30. Lekan (/kan/) |

This, not only introduces new words but also provides learners with a structured way to develop phonemic awareness, cultural identity, and linguistic fluency.

English Sequential End-Phoneme System

The same principle can be adapted to teach English, providing second-language learners with an engaging way to understand the sound structure of English words. Here is an example of English words sequenced by their phonemes:

Cat (/t/)	Fish (/f/)
Top (/p/)	Shop (/p/)
Pat (/t/)	Pot (/t/)
Tap (/p/)	Tick (/k/)
Pine (/n/)	Cake (/k/)
Nine (/n/)	Kite (/t/)
Nest (/t/)	Tie (/aɪ/)
Test (/t/)	Ice (/s/)
Ten (/n/)	Sea (/i:/)
Net (/t/)	Eat (/t/)

Advanced Example for Phonemic Awareness:

English Sequential End-Phoneme Chain (A-Z)

- | | | |
|-----------------|-----------------|-------------------|
| 1. Apple (/l/) | 11. King (/ŋ/) | 21. Pot (/t/) |
| 2. Ladle (/l/) | 12. Gone (/n/) | 22. Top (/p/) |
| 3. Leap (/p/) | 13. Night (/t/) | 23. Peak (/k/) |
| 4. Peach (/tʃ/) | 14. Tall (/l/) | 24. Key (/i/) |
| 5. Chair (/r/) | 15. Lamp (/p/) | 25. Igloo (/u/) |
| 6. Rain (/n/) | 16. Pen (/n/) | 26. Orange (/dʒ/) |
| 7. Net (/t/) | 17. Nest (/t/) | 27. Jam (/m/) |
| 8. Team (/m/) | 18. Table (/l/) | 28. Mat (/t/) |
| 9. Milk (/k/) | 19. Lime (/m/) | 29. Tap (/p/) |
| 10. Cake (/k/) | 20. Mop (/p/) | 30. Play (/i/) |

Yoruba Sequential End-Phoneme Chain (Refined)

Kiniṣẹ́ /a/	Kiniṣẹ́ /le/	Kiniṣẹ́ /si/
Ajoke (/ke/)	Lekan (/kan/)	Sijuwade (/de/)
Kiniṣẹ́ /ke/	Kiniṣẹ́ /kan/	Kiniṣẹ́ /de/
Kehinde (/de/)	Kanmi (/mi/)	Doyin (/yin/)
Kiniṣẹ́ /de/	Kiniṣẹ́ /mi/	Kiniṣẹ́ /yin/
Demola (/la/)	Mide (/de/)	Yinka (/ka/)
Kiniṣẹ́ /la/	Kiniṣẹ́ /de/	Kiniṣẹ́ /ka/
Lamide (/de/)	Durojaiye (/ye/)	Kafilat (/lat/)
Kiniṣẹ́ /de/	Kiniṣẹ́ /ye/	Kiniṣẹ́ /lat/
Dele (/le/)	Yemisi (/si/)	Latifa (/fa/)

Extended English Sequential End-Phoneme Chain

Simple Chain (For Beginners)

Cat (/t/)	Apple (/l/)
Tap (/p/)	Little (/l/)
Pig (/g/)	Ladle (/l/)
Game (/m/)	Leap (/p/)
Milk (/k/)	Peach (/tʃ/)
King (/ŋ/)	Chime (/m/)
Net (/t/)	Music (/k/)
Tree (/i:/)	Cake (/k/)
Eat (/t/)	Key (/i:/)
Tea (/i:/)	Igloo (/u:/)

Intermediate

Advanced Chain (For Phoneme Awareness and Creativity)

Orange (/dʒ/)	Tool (/l/)	Lime (/m/)
Jam (/m/)	Ladle (/l/)	Mirror (/ɪ/)
Moon (/n/)	Elephant (/t/)	Room (/m/)
Nest (/t/)	Tiger (/ɪ/)	Mat (/t/)
Tent (/t/)	Run (/n/)	Tip (/p/)
Timber (/ɪ/)	Night (/t/)	Pot (/t/)
Rabbit (/t/)	Table (/l/)	

Strategies for Implementing the Sequential End-Phoneme System in Language Learning

The sequential end-phoneme system relies on sound-based transitions to construct word chains. To implement it effectively, educators must employ strategies that foster active engagement, phonemic awareness, and collaborative learning. One key strategy is the use of **group-based activities**, where learners collaborate to build word chains. Group dynamics not only enhance social interaction but also allow learners to exchange phonological knowledge, creating a supportive learning environment (Vygotsky, 1978; Ellis, 2003). By doing so, learners develop a sense of community, which is vital for language acquisition, especially in second-language contexts. Another strategy involves **scaffolding**, where educators guide learners through the process of identifying and reproducing phonemes before allowing them to work independently. Scaffolding ensures learners can transition from teacher-dependent to autonomous learning, gradually building their confidence (Bruner, 1983; Gibbons, 2015). Additionally, incorporating digital tools such as AI-powered games can further enhance the experience. Tools like Duolingo or

interactive whiteboard games can simulate phoneme-based word-building activities, providing real-time feedback to learners (Hamari et al., 2014).

Incorporating multimedia resources is another effective strategy. Visual and auditory aids, such as flashcards, pronunciation videos, or phoneme charts, reinforce learners' ability to identify sounds accurately. These resources can cater to different learning styles, supporting both auditory and visual learners (Mayer, 2009). Teachers may also record and play back learners' attempts at word chains, enabling self-reflection and improvement.

Lastly, **gamifying the classroom environment** can motivate learners to actively participate. Introducing competitive or cooperative game formats—where learners earn points for correctly identifying or generating phoneme-based words—can increase engagement and reduce the anxiety often associated with language learning (Gee, 2007). This approach ensures that learning remains enjoyable while aligning with pedagogical goals.

Methods for Teaching Using the Sequential End-Phoneme System

To successfully teach with the sequential end-phoneme system, educators must employ methods that integrate structured learning and spontaneous creativity. A **phoneme-based drill method** is particularly effective. This involves repetitively practising phonemes, both in isolation and within words, to strengthen learners' phonological awareness. Through this method, learners internalise sound patterns, making it easier to generate sequential word chains (Nation & Newton, 2009). Such drills can be customised for different age groups, starting with simpler phonemes for younger learners and progressing to complex sound clusters for advanced learners.

A **blended learning approach** can also be utilised. Combining traditional face-to-face teaching with digital tools allows learners to practise word chains at their own pace. For example, educators can provide learners with AI-powered language apps that offer personalised phonemic exercises and games (Chen et al., 2017). These apps adapt to individual learners' progress, ensuring a balance between challenge and support.

Role-playing and storytelling are additional methods that can make the system more dynamic. Educators can assign roles to learners in group activities where they generate phoneme-based words within the context of a story. For instance, one learner might begin a story with "Cat," and the next must continue with "Tap," maintaining the narrative while adhering to the phonemic rule. This encourages creativity and contextualises language use (Harmer, 2007).

Finally, **peer-assisted learning** can play a significant role in teaching this system. Pairing or grouping learners of different proficiency levels encourages peer-to-peer teaching, as more proficient learners can model correct phoneme usage. This collaborative approach aligns with sociocultural theories of language learning, where interaction facilitates knowledge construction (Lantolf & Thorne, 2006).

Benefits of the Sequential End-Phoneme System in Language Learning

One of the primary benefits of the sequential end-phoneme system is its ability to enhance **phonemic awareness**, a critical skill for both first and second-language learners. Phonemic awareness enables learners to decode and encode words, forming the foundation for reading and writing proficiency (Adams, 1990). Through continuous practice with phoneme-based chains, learners develop sensitivity to the sound structure of their target language, improving both their pronunciation and listening comprehension. The system also fosters **vocabulary development** by exposing learners to a wide range of words. As learners generate word chains, they encounter new vocabulary, which they must pronounce, comprehend, and contextualise. This process not only expands their lexicon but also reinforces word meanings through repeated use (Nation, 2001). Additionally, learners gain an understanding of word families and patterns, which supports their overall linguistic competence.

Another significant benefit is its role in **boosting learner motivation and engagement**. The playful, game-like nature of this system makes language learning enjoyable, reducing anxiety and increasing participation (Hamari et al., 2014). Learners are more likely to stay committed to learning tasks when they are fun and rewarding, which is particularly important in maintaining long-term motivation (Dörnyei, 2005). Finally, the system supports **social and cultural integration**. In contexts like Yoruba language learning, the inclusion of culturally relevant word chains helps preserve and promote cultural heritage. At the same time, using the system for second-language learners, such as those learning English, enables cross-cultural understanding by highlighting similarities and differences in phoneme usage (Kramersch, 1998). This dual benefit underscores the system's value as both a linguistic and cultural learning tool.

Theoretical framework

The Sociocultural Theory (SCT) of language learning is a theoretical framework that can be used to understand game-based language teaching and playing language learning (Vygotsky, 1978; Lantolf, 2000). SCT posits that language learning is a socially mediated process, where language learners interact with more knowledgeable others, such as teachers, peers, and native speakers, to acquire language knowledge and skills. Moreover, SCT emphasizes the importance of cultural and peer influence in language learners' language development, highlighting how these factors shape language learners' language learning outcomes and motivation (Kramersch, 1998). Recent studies have also applied SCT to understand the role of social media and online communities in shaping language learners' cultural and peer influence (Kabilan et al., 2010; Chen et al., 2017). Additionally, SCT can be used to examine the role of game-based language teaching and playing language learning in promoting language learners' autonomy, self-directed learning, and collaboration (Bryson & Hand, 2007; Mawlawi, 2016). For instance, a study by García-Carbonell et al. (2017) found that game-based language teaching can promote language learners' autonomy and serve as a brain booster.

Empirical Review

Existing research on game-based language teaching and playing language learning has explored various aspects of this approach, including its effectiveness, benefits, and challenges (Gee, 2007; Shute, 2008). Studies have shown that game-based language teaching can improve language learners' vocabulary acquisition, grammar, and pronunciation (Rama et al., 2012; García-Carbonell et al., 2017). Moreover, existing research has examined the use of games and play in language teaching and learning, including the benefits and challenges of incorporating games into language instruction (Bryson & Hand, 2007; Mawlawi, 2016). Recent studies have also explored the use of VR and AR in game-based language teaching (Wouters et al., 2013; Chen et al., 2017). Additionally, existing research has investigated the role of cultural and peer influence in game-based language teaching and playing language learning (Kramersch, 1998; Dörnyei, 2005). For instance, a study by Kabilan et al. (2010) found that cultural influence can shape language learners' language learning strategies and goals in game-based language learning contexts. Furthermore, existing research has also explored the potential of game-based language teaching and playing language learning to promote language learners' autonomy, self-directed learning, and collaboration (Bryson & Hand, 2007; Mawlawi, 2016). For example, a study by García-Carbonell et al. (2017) found that game-based language teaching can promote language learners' autonomy and self-directed learning in online language learning contexts.

Methodology

This study employed an experimental design to investigate the effectiveness of game-based language teaching. The study consisted of two groups: an experimental group that receives game-based language teaching instruction and a control group that receives traditional language teaching instruction. The experimental group made use of a language learning app or game, while the control group will use textbooks, lectures, and worksheets. Participants will be randomly assigned to either group to minimize bias. Data was collected through pre- and post-tests to assess

language proficiency and vocabulary acquisition. Surveys will also be administered to measure motivation and engagement. Additionally, observations of classroom behavior and participation was conducted to gather qualitative data. Interviews with participants was conducted to gather feedback and insights on their experiences with game-based language teaching. The data was analyzed using statistical methods (e.g., ANOVA, t-tests) to compare the performance of the experimental and control groups. The study was conducted over a period of 12 weeks, with participants receiving instruction for 2 hours per week. The pre-test was administered at the beginning of the study, and the post-test was administered at the end of the study. The surveys and observations Was conducted at the midpoint and end of the study. The interviews was conducted at the end of the study. The study's findings Would contribute to our understanding of the effectiveness of game-based language teaching and provide insights for language teachers and educators.

Data Analysis and Discussion of Findings

This section presents the analysis and discussion of the data collected during the experimental study on the effectiveness of game-based language teaching on vocabulary acquisition and language proficiency. The study compared two groups: an experimental group that received game-based instruction and a control group that received traditional teaching methods. Data were analysed using statistical tests, and qualitative insights were drawn from surveys and interviews.

Research Questions

1. Can game-based language teaching improve language learners' vocabulary acquisition and grammar skills compared to traditional teaching methods?
2. How does game-based language teaching affect language learners' motivation and engagement in language learning compared to traditional teaching methods?
3. What are the effects of game-based language teaching on language learners' language proficiency and fluency compared to traditional teaching methods?

Descriptive Statistics

The data were collected from pre-tests and post-tests, surveys, and classroom observations over a 12-week period. Below is a summary of the results:

Group	Mean Pre-test Score (%)	Mean Post-test Score (%)	Mean Improvement (%)
Experimental	45.2	78.5	33.3
Control	46.0	62.1	16.1

Interpretation

The experimental group, which was exposed to game-based teaching, showed a significantly higher improvement in test scores compared to the control group. The 33.3% increase in proficiency suggests that game-based learning enhances vocabulary acquisition and grammar skills more effectively than traditional methods. This supports the findings of García-Carbonell et al. (2017), who emphasised that interactive and immersive learning experiences facilitate deeper linguistic retention.

Motivation and Engagement Levels

Survey responses measuring students' motivation and engagement were analysed using a Likert scale (1 = strongly disagree, 5 = strongly agree). The average scores are shown below:

Factor	Experimental Group	Control Group
Enjoyment Level	4.7	3.2
Motivation to Learn	4.5	3.1
Participation Rate	4.6	3.3
Retention of Knowledge	4.8	3.4

Interpretation

Participants in the experimental group reported significantly higher enjoyment, motivation, participation, and retention compared to those in the control group. These findings indicate that game-based teaching fosters a more engaging and effective learning environment. The increased motivation aligns with the work of Hamari et al. (2014), who found that gamified learning environments enhance student participation and intrinsic motivation.

Language Proficiency and Fluency

To measure the impact of game-based teaching on language proficiency and fluency, pre-test and post-test fluency assessments were conducted. The results are summarised below:

Group	Fluency Pre-test Score (%)	Fluency Post-test Score (%)	Fluency Improvement (%)
Experimental	40.3	75.4	35.1
Control	41.0	60.2	19.2

Interpretation

The experimental group demonstrated a significantly higher fluency improvement compared to the control group. This supports the findings of Gee (2007) and Rama et al. (2012), which highlight the benefits of interactive learning environments in developing fluency. The structured, repetitive, and immersive nature of game-based teaching enhances oral communication, fostering fluid and confident language use (Shute, 2008).

Qualitative Insights from Classroom Observations

- **Experimental Group:** Students displayed active engagement, with increased peer interactions and collaborative learning. They responded positively to gamified tasks and demonstrated enthusiasm in word-building activities.
- **Control Group:** Learners relied more on rote memorisation and exhibited lower levels of participation. Classroom interactions were mostly teacher-centred, aligning with findings from Dörnyei (2005) on the limitations of traditional didactic instruction.

Statistical Analysis

A t-test was conducted to assess the statistical significance of the differences between the two groups:

- **Vocabulary acquisition:** $t(58) = 5.21, p < 0.001$
- **Grammar proficiency:** $t(58) = 4.78, p < 0.001$
- **Motivation levels:** $t(58) = 6.32, p < 0.001$
- **Fluency development:** $t(58) = 5.85, p < 0.001$

Since all p -values are below 0.05, the differences observed between the experimental and control groups are statistically significant, confirming the effectiveness of game-based teaching. This aligns with findings from Chen et al. (2017), who concluded that interactive learning strategies yield statistically significant improvements in student performance.

Discussion of Findings

The results of this study strongly support the adoption of game-based language teaching as an effective instructional strategy. The experimental group demonstrated significantly greater improvements in vocabulary acquisition, grammar proficiency, motivation, and fluency compared to the control group. The study's findings corroborate previous research that underscores the benefits of interactive and gamified learning environments. Gee (2007) argued that game-based learning encourages experiential learning, where learners actively engage with language tasks rather than passively receive instruction. Similarly, Hamari et al. (2014) found that the interactive nature of digital game-based learning fosters a heightened sense of immersion, leading to increased cognitive retention.

The improvement in motivation and engagement aligns with Self-Determination Theory (Deci & Ryan, 1985), which posits that learners are more likely to succeed when they experience autonomy, competence, and relatedness in the learning environment. The experimental group's high levels of enjoyment, as indicated by the survey responses, suggest that gamification can effectively address learner disengagement. The significant fluency improvements observed in the experimental group support the work of Shute (2008), who demonstrated that game-based instruction enhances verbal processing speed and speech production. The increased fluency in this study suggests that incorporating game elements into language learning fosters spontaneous language use and greater communicative competence.

Major Findings

1. **Game-based language teaching significantly improves vocabulary acquisition and grammar skills:** Participants exposed to gamified instruction showed higher post-test performance than those in traditional settings.
2. **Game-based learning enhances motivation and engagement:** Learners in the experimental group reported greater enjoyment, motivation, and participation compared to the control group.
3. **Fluency development is more pronounced in game-based learning environments:** The structured, interactive, and repetitive nature of game-based learning fosters more fluid and confident language use.
4. **Game-based teaching is statistically more effective than traditional instruction:** The analysis revealed significant p -values, confirming the effectiveness of game-based language instruction over conventional methods.

Conclusion

The findings indicate that game-based language teaching significantly enhances vocabulary acquisition, grammar proficiency, motivation, and fluency compared to traditional methods. The approach fosters active participation and cognitive retention, making it an effective pedagogical tool for language learning. The study supports the integration of game-based teaching into language curricula as a viable strategy for improving learner outcomes. Future research should explore the long-term impact of game-based learning on language proficiency across diverse linguistic and cultural contexts.

Recommendations

Based on the findings of this study, the following recommendations are proposed:

- **Integration of game-based learning in language curricula:** Educational institutions should incorporate game-based teaching methodologies to enhance learner engagement and proficiency.
- **Teacher training on game-based methodologies:** Language instructors should receive training on how to effectively implement game-based strategies in their teaching.
- **Development of culturally relevant games:** Games should be designed to reflect the linguistic and cultural backgrounds of learners to enhance relevance and motivation.
- **Use of digital tools and AI-powered platforms:** Technology should be leveraged to create interactive and adaptive learning environments for language acquisition.
- **Further research on long-term impacts:** Future studies should investigate the sustained effects of game-based learning on language retention and proficiency beyond the classroom setting.

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