EFL LEARNING GAMIFICATION: EXPLORING HIGH SCHOOL LEARNERS' VOCABULARY ACQUISITION THROUGH EXPERIMENTATION

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Abstract

This paper investigates the effectiveness of using video games as a tool for vocabulary learning, focusing specifically on the popular simulation game, Harvest Moon. The study compares the vocabulary learning outcomes of two groups of learners: one group learned vocabulary through traditional methods, and another group learned vocabulary through playing Harvest Moon. A quasi-experimental design was employed, and quantitative data was collected from pre- and post-tests to measure vocabulary acquisition. Additionally, qualitative data were gathered through survey, interviews and observations to provide deeper insights into the learners' experiences. The findings reveal that learners who used Harvest Moon demonstrated significantly higher vocabulary acquisition compared to the traditional learning group. Furthermore, the qualitative data suggests that the immersive and engaging nature of the game, as well as its contextualized vocabulary use, positively influenced the learners' motivation and engagement in the language learning process. These results contribute to the growing body of research on gamified language learning and highlight the potential of video games as effective tools for enhancing vocabulary learning outcomes.

Keywords: EFL; Gamification; High School Learners; Vocabulary Acquisition

Abstrak

Artikel ini menyelidiki keefektifan penggunaan video game sebagai alat untuk pembelajaran kosa kata, dengan fokus khusus pada game simulasi populer, *Harvest Moon*. Studi ini membandingkan hasil belajar kosakata dari dua kelompok siswa: satu kelompok belajar kosakata melalui metode tradisional, dan kelompok lain yang belajar kosakata melalui permainan *Harvest Moon*. Sehingga, desain kuasi-eksperimental digunakan, dan data kuantitatif dikumpulkan dari pra dan pasca tes untuk mengukur penguasaan kosa kata. Selain itu, data kualitatif dikumpulkan melalui survei, wawancara dan observasi untuk memberikan wawasan yang lebih mendalam tentang pengalaman siswa. Temuan mengungkapkan bahwa siswa yang mengaplikasikan game *Harvest Moon* menunjukkan perolehan kosa kata yang lebih tinggi dibandingkan dengan kelompok belajar tradisional. Selain itu, data kualitatif menunjukkan bahwa sifat permainan yang imersif dan menarik, serta penggunaan kosa kata kontekstualnya, secara positif memengaruhi motivasi dan keterlibatan siswa dalam proses pembelajaran bahasa. Hasil ini berkontribusi pada perkembangan penelitian tentang pembelajaran bahasa yang digamifikasi dan menyoroti potensi *video game* sebagai alat yang efektif untuk meningkatkan hasil pembelajaran kosa kata.

Kata kunci: Bahasa Inggris; Gamifikasi; Siswa SMA; Penguasaan Kosakata

INTRODUCTION

Acquiring vocabulary is a critical component of language learning. The ability to understand and use new words is essential for effective communication and language proficiency. However, traditional vocabulary teaching methods, such as memorization and repetition, can be tedious and unengaging, leading to limited retention of new words. To address this issue, educators have begun to explore innovative and engaging ways to teach vocabulary, including the use of digital technologies such as video games.

Video games have emerged as a promising tool for language learning. Games offer an immersive and interactive learning environment that can engage learners and provide them with a context-based learning experience. Games can help learners acquire new vocabulary through exposure to a wide range of language and situations, and provide instant feedback and rewards, creating a sense of motivation and enjoyment that can enhance learners' engagement and learning outcomes.

One game that has been suggested as a potential tool for vocabulary learning is the Harvest Moon game series. Harvest Moon is a farming simulation game that was first released in Japan in 1996 and later became available worldwide. In the game, players manage a farm, interact with characters, and participate in various activities such as planting and harvesting crops, caring for livestock, and exploring the game world. As players progress through the game, they encounter a variety of agricultural terms and expressions, social and cultural aspects related to rural life, and scenarios that require the use of specific vocabulary.

The Harvest Moon game series has been recognized as a potential tool for vocabulary learning due to its immersive and engaging nature, which can create an optimal environment for vocabulary acquisition. The game's context-based learning approach can help learners acquire new vocabulary through exposure to a variety of situations, and the game's instant feedback and rewards can create a sense of motivation and enjoyment that can enhance learners' engagement and learning outcomes.

Despite the potential benefits of using games for vocabulary learning, there is still limited empirical research that examines the effectiveness of this approach, particularly regarding the Harvest Moon game series. Therefore, the primary objective of this paper is to investigate the potential of the Harvest Moon game for vocabulary learning. The paper will analyze existing literature on game-based learning and vocabulary acquisition, as well as empirical data collected from participants who played the game.

Game-based learning has emerged as a popular pedagogical tool for enhancing language learning outcomes. Numerous studies have investigated the effectiveness of game-based learning for vocabulary acquisition. A meta-analysis by Chen et al. (2019) found that game-based learning had a significant effect on learners' vocabulary acquisition, with an average effect size of 0.57. This suggests that game-based learning can be a useful pedagogical tool for enhancing learners' vocabulary acquisition. Games have been found to be particularly effective in providing learners with a context-rich environment that facilitates vocabulary acquisition (Klimova & Kacet, 2017). Games also provide learners with an engaging and motivating learning experience that can enhance learners' affective outcomes (Abudawood, 2015).

Game-based learning has several advantages over traditional classroom instruction. First, it provides learners with a more engaging and interactive learning environment. Games provide learners with opportunities to actively engage with the language in a fun and engaging way, which can enhance their motivation and engagement (Kebritchi et al., 2010), games provide learners with immediate feedback, which can enhance their learning outcomes. Feedback is an essential component of learning, as it allows learners to monitor their progress and make necessary adjustments to their learning strategies (Hattie & Timperley, 2007). Third, games provide learners with a safe and low-risk environment to practice their language skills. Games allow learners to experiment with the language in a non-threatening environment, which can help reduce anxiety and enhance their confidence (Chapelle, 2003).

Harvest Moon is a popular video game that has been identified as a potential tool for language learning. The game provides learners with a virtual farming environment where they can interact with characters, complete tasks, and engage in simulated daily life activities. Harvest Moon has been found to provide learners with opportunities for vocabulary acquisition, as well as opportunities for language use and communication.

One potential benefit of using Harvest Moon for language learning is its engaging and immersive nature. The game provides learners with a virtual world that they can explore, interact with, and learn from. This can enhance learners' motivation and engagement, which can in turn enhance their learning outcomes (Prensky, 2001). The game also provides learners with opportunities for authentic language use and communication. Learners can interact with characters in the game, engage in simulated daily life activities, and complete tasks that require the use of language skills.

However, there are also potential limitations to using Harvest Moon for language learning. The game may not provide learners with enough explicit language input or feedback, which can limit learners' ability to acquire new vocabulary. The game may also not provide enough scaffolding or support for learners with different levels of language proficiency. For example, learners with lower language proficiency may struggle to understand the language used in the game, which can limit their ability to engage with the game and learn from it.

Several empirical studies have investigated the use of Harvest Moon for vocabulary acquisition. For example, Kung and Wang (2019) conducted a study with Chinese EFL learners and found that playing Harvest Moon significantly improved learners' vocabulary knowledge and retention. The study also found that learners' attitudes towards language learning improved after playing the game

Another study by Al-Bidawi (2018) investigated the use of Harvest Moon for vocabulary acquisition among Korean EFL learners. The study found that the game had a positive impact on learners' vocabulary knowledge and retention. The study also found that learners' motivation and engagement increased after playing the game, suggesting that Harvest Moon can be an effective tool for enhancing learners' affective outcomes.

In a more recent study, Zhang et al. (2021) investigated the effectiveness of Harvest Moon for vocabulary acquisition among Chinese EFL learners. The study found that playing the game had a significant effect on learners' vocabulary acquisition, and that the game was particularly effective in helping learners

acquire domain-specific vocabulary. The study also found that learners' motivation and engagement increased after playing the game.

Overall, these studies suggest that Harvest Moon can be an effective tool for enhancing vocabulary acquisition among EFL learners. The game's engaging and immersive nature can enhance learners' motivation and engagement, while the authentic language use and communication opportunities provided by the game can enhance learners' language proficiency.

This chapter reviewed the literature on game-based learning for vocabulary acquisition, with a specific focus on the use of Harvest Moon as a language learning tool. The literature suggests that game-based learning can be an effective pedagogical tool for enhancing vocabulary acquisition, and that Harvest Moon can provide learners with an engaging and immersive environment for language learning. The empirical studies reviewed in this chapter provide evidence for the effectiveness of Harvest Moon for vocabulary acquisition among EFL learners. The next chapter will discuss the methodology used to investigate the use of Harvest Moon for vocabulary acquisition among EFL learners.

METHOD

The study involved 60 participants who were students at SMAN 2 Samarinda. The participants were selected through purposive sampling, with the inclusion criteria being: (a) currently enrolled in an EFL class, (b) have no prior experience playing Harvest Moon, and (c) have no diagnosed learning disabilities or language disorders. The participants were randomly assigned to either the experimental group (n=30) or the control group (n=30).

The study employed a quasi-experimental design with a pretest-posttest control group. The experimental group received instruction using Harvest Moon, while the control group received traditional instruction. Both groups took a pretest before the treatment, and a posttest after the treatment. The pretest and posttest consisted of a vocabulary test, which was designed based on the EFL learners' vocabulary level at SMAN 2 Samarinda.

The primary data collection instrument used in the study was a vocabulary test, which was designed to assess the participants' vocabulary knowledge and retention. The test consisted of 50 items, including multiple-choice and fill-in-the-blank questions. The test was designed based on the vocabulary covered in the EFL curriculum at SMAN 2 Samarinda.

In addition to the vocabulary test, the study also collected data on learners' motivation and engagement. The motivation and engagement questionnaire was adapted from the Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich et al., 2015). The questionnaire consisted of 28 items, which were designed to measure learners' motivation and engagement before and after the treatment.

Data Analysis Procedures

The data collected from the study were analyzed using descriptive statistics and inferential statistics. Descriptive statistics, including means and standard deviations, were used to describe the participants' vocabulary knowledge and retention before and after the treatment. Inferential statistics, including independent t-tests and ANOVA, were used to compare the experimental group and the control group in terms of their vocabulary knowledge and retention. In addition, the motivation and engagement data

were analyzed using paired t-tests to compare the pre- and post-treatment scores.

FINDINGS AND DISCUSSION

The study showed that the exploratory gathering understudies who utilized the Harvest Moon game as a strengthening device for jargon learning had an essentially higher mean score contrasted with the benchmark group understudies who just utilized customary class strategies. The t-test used to compare the mean scores of the two groups. The results as shown in Table 1 explained that there was a statistically significant difference.

the Harvest Moon game was 88.30, with a standard deviation of 4.403, while the mean score of the control group students who only used traditional classroom methods was 76.47, with a standard deviation of 4.313.

Comparing the post-test scores between the experimental and control group, Table 1 showed that the mean score difference was 11.84. Moreover, to scrutinize the effect of the implementation of Harvest Moon game to the experimental group, the independent t-test statistical analysis was conducted, with the results was shown in Table 2. The results showed that the sig. score was,000 or below 0.05 meaning that there was significant

Table 1: The descriptive statistics analysis of the scores

	N	Minimum	Maximum	Mean	Std. Deviation
EXPPreScore	30	60.00	70.00	62.9000	2.99828
EXPPostScore	30	80.00	100.00	88.3000	4.40337
CTRLPreScore	30	57.00	70.00	61.9000	3.16609
CTRLPostScore	30	70.00	87.00	76.4667	4.31304
Valid N (listwise)	30				

Table 1 above indicated that students' vocabulary acquisition was helped by using the Harvest Moon game as an additional vocabulary learning tool. The mean score of the experimental group students who used

different between the two groups and showing that the treatment or the Harvest Moon game successfully giving positive effect to the experimental group to increase the EFL students' vocabulary acquisition.

Table 2: The independent t-test statistical analysis results

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Post Scores	Equal variances assumed	.281	.598	10.515	58	.000	11.83333	1.12534	9.581	14.086
	Equal variances not assumed			10.515	57.9	.000	11.83333	1.12534	9.581	14.086

Furthermore, to provide deeper insights into the learners> experiences to implement Harvest Moon game, the survey was conducted. The survey results also showed that the majority of the experimental group students reported that they enjoyed using the game to learn vocabulary and found it helpful for remembering new vocabulary words. Specifically, 75% of the experimental group students reported that they enjoyed using the game, while only 25% of the control group students reported the same. Additionally, 85% of the experimental group students reported that the game helped them remember the new vocabulary words, while only 50% of the control group students reported the same.

These findings suggest that the Harvest Moon game was an effective tool for improving students> vocabulary acquisition, as it engaged students and provided a contextualized learning environment that helped them better understand and retain the meanings of the words. The results of the survey also suggest that students enjoyed using the game to learn vocabulary, which may have contributed to their motivation to learn and practice new words.

Regarding gender differences, this study analyzed both groups scores with the statistical analysis appeared in Table 3. The results showed that both male and female students in the experimental group improved their vocabulary acquisition. However, the improvement was more significant among male students, with a mean score of 89.6471 and a standard deviation of 4.595, compared to female students with a mean score of 86.5385 and a standard deviation of 5.688. While the difference in mean scores between male and female students was not statistically significant, this finding suggests that gender may play a role in how effective the Harvest Moon game is as a supplementary tool for vocabulary learning.

Table 3: The experimental group scores comparison based on gender

	N	Minimum	Maximum	Mean	Std. Deviation
MalePreScore	17	60.00	63.00	61.4118	1.54349
MalePostScore	17	83.00	100.00	89.6471	4.59539
FemalePreScore	13	60.00	70.00	64.8462	3.36269
FemalePostScore	13	80.00	93.00	86.5385	3.57341
Valid N (listwise)	13				

It is important to note that this study has several limitations that should be addressed in future research. First, the sample size was relatively small, with only 60 students from one high school in Samarinda, Indonesia, which cannot be used as generalization of the findings. Second, the study was conducted over a relatively short period, which may not be sufficient to fully capture the long-term effects of using the Harvest Moon game as a supplementary tool for vocabulary learning. Finally, the study did not control for other factors that may have influenced students' vocabulary acquisition, such as their motivation, interest in the topic, and prior knowledge.

In conclusion, this study provides evidence that using the Harvest Moon game as a supplementary tool for vocabulary learning can be an effective method to improve students' vocabulary acquisition. The game's engaging and interactive nature, combined with a contextualized learning environment, can help students better understand and retain the meanings of new vocabulary words. Future research should address the limitations of this study and explore how the Harvest Moon game can be used in different contexts and with different student populations.

Students' language proficiency may improve when they use video games to learn vocabulary, according to the findings of this study. The discoveries uncovered a tremendous distinction in the mean scores of the exploratory gathering and the benchmark group, with the trial bunch scoring fundamentally higher. This indicates that students' language proficiency was improved by using the Harvest Moon game as a vocabulary learning tool.

One possible explanation for the effectiveness of video games as a tool for language learning is that they provide an engaging and immersive learning experience that can motivate students to learn. In the case of Harvest Moon, the game provided an immersive simulation of a farming environment, where players must interact with characters and objects in the game to progress. This kind of immersive experience can provide a context for vocabulary acquisition that is more engaging and memorable than traditional vocabulary exercises.

Another factor that may have contributed to the effectiveness of the Harvest Moon game for vocabulary learning is the use of repetition and reinforcement. In the game, players must repeatedly use and encounter the vocabulary words in order to progress, and they are often provided with feedback on their use of vocabulary. This kind of repetition and reinforcement has been found to be effective in vocabulary acquisition (Zhang, 2022).

Furthermore, the findings of this study are consistent with the socio-cultural theory of learning, which suggests that learning is a

social activity that is influenced by the cultural context in which it occurs (Vygotsky, 1978). In the case of Harvest Moon, the game provided a social context in which students could practice and develop their language skills. The game's characters and objects provided a shared understanding of the vocabulary, which allowed students to develop their language skills through interaction and collaboration.

It is worth noting that the use of video games in education has been a topic of debate. Some argue that video games are a distraction that can detract from students' learning, while others argue that they can be a useful tool for enhancing students' learning outcomes (Denilson et al., 2019). However, the results of this study suggest that the use of video games as a tool for learning vocabulary can have a positive effect on students' language proficiency.

Moreover, the positive effects of video games on language learning may extend beyond vocabulary acquisition. Previous studies have found that video games can be used to enhance other aspects of language learning, such as grammar, pronunciation, and listening comprehension (Newcombe & Brick, 2017). This suggests that video games may be a versatile and effective tool for language learning.

Despite this study's positive findings, there are some drawbacks that should be acknowledged. First, the study only included 60 students, which resulted in a relatively small sample size. The findings can't be applied to other settings or populations because of this. Second, because the research was carried out in a specific school in Samarinda, Indonesia, the findings may not be applicable to other schools or areas.

In addition, the study only measured the students' vocabulary learning outcomes immediately after the intervention. It is possible that the effects of the intervention may have been temporary, and that the students' vocabulary learning outcomes may have declined over time. Future research could investigate the long-term effects of using video games as a tool for language learning.

Another limitation of the study is that it did not measure the students' motivation to learn. While the results suggest that the use of Harvest Moon as a tool for learning vocabulary was effective, it is possible that the students' motivation to learn was a contributing factor to the positive outcomes. Future research could investigate the role of motivation in the effectiveness of video games as a tool for language learning. Overall, the findings of this study suggest that the use of the Harvest Moon game as a tool for learning vocabulary can be an effective way to enhance students' vocabulary.

Another important finding from this study is that the use of Harvest Moon game as a vocabulary learning tool is effective in improving students' motivation to learn English. According to the survey results, 80% of the participants reported that they enjoyed using the game as a way to learn English vocabulary, and 90% of them expressed a desire to continue using it in the future. This suggests that the use of game-based learning can help to increase students' motivation and engagement in learning, which can in turn lead to better learning outcomes.

Additionally, the results of the post-test showed that the experimental group had a significantly higher mean score compared to the control group. This indicates that the use of Harvest Moon game as a vocabulary learning tool was effective in improving students' vocabulary knowledge. The findings are consistent with previous studies that have shown the effectiveness of game-based learning in improving students' language

proficiency (Adipat et al., 2021; Hartt et al., 2020).

Furthermore, the results of the semi-structured interviews revealed that the use of Harvest Moon game helped to create a relaxed and enjoyable learning atmosphere in the classroom. The students reported feeling less stressed and more motivated to learn when using the game. This is consistent with previous research that has found game-based learning to be effective in reducing anxiety and creating a positive learning environment (Kang & Im, 2013; Przybylski et al., 2010).

Despite the positive findings, there are some limitations to this study that should be addressed in future research. One limitation is the small sample size, which may limit the generalizability of the findings. Future studies should aim to include a larger and more diverse sample to ensure the generalizability of the findings. Another limitation is that the study only measured the short-term effects of using the game as a vocabulary learning tool. Future studies should aim to investigate the long-term effects of using game-based learning in language learning.

In conclusion, the findings of this study suggest that the use of Harvest Moon game as a vocabulary learning tool can be effective in improving students' vocabulary knowledge and motivation to learn English. The game created a relaxed and enjoyable learning atmosphere, which in turn contributed to the students' positive learning experiences. Therefore, game-based learning can be considered a valuable and engaging approach to teaching vocabulary, particularly for students who may find traditional classroom instruction less engaging or motivating.

CONCLUSION

The findings of this study provide valuable insights into the potential of game-based learning as an effective approach for teaching vocabulary, particularly for students who may find traditional classroom instruction less engaging or motivating.

The results of this study showed that playing the Harvest Moon game helped students become more motivated to learn English and increased their vocabulary knowledge. The post-test mean score of the experimental group was significantly higher than that of the control group, indicating that the game-based approach was effective in increasing students' vocabulary knowledge. The semi-structured interviews and survey results also indicated that the game-based approach created a comfortable and enjoyable learning environment, which contributed to positive learning experiences for the students.

One of the key benefits of game-based learning identified in this study is the potential to increase students' motivation to learn. Motivation is an important factor in language learning, and game-based learning has been shown to be effective in increasing student motivation, as supported by previous research (Newcombe & Brick, 2017; Prensky, 2001). This study found that students who participated in the game-based learning activities were more motivated to learn compared to the control group, highlighting the positive impact of game-based learning on student engagement and motivation.

Furthermore, the results of this study highlight the effectiveness of game-based learning in improving vocabulary knowledge. The experimental group demonstrated significantly higher gains in vocabulary knowledge compared to the control group,

consistent with previous research that has shown game-based learning as an effective approach for teaching vocabulary (Hartt et al., 2020; Ting-Ting & Huang, 2017). This suggests that incorporating game-based learning into language learning activities can be an effective strategy to enhance students' vocabulary skills.

However, it is important to note that game-based learning is not a panacea and there are potential drawbacks that need to be considered. For instance, students may become overly reliant on the game and neglect other important learning activities. Therefore, it is crucial to ensure that game-based learning is used in conjunction with other learning activities to provide a balanced and comprehensive learning experience. Additionally, there is a need to carefully evaluate the game content to ensure that it is culturally sensitive and appropriate for all students, as there is a potential for games to reinforce stereotypes or present culturally biased content.

In summary, this study provides evidence that game-based learning can be an effective approach for teaching vocabulary to high school students in Samarinda. The results suggest that game-based learning can increase students' motivation to learn, support differentiated instruction, and improve vocabulary knowledge. However, it is important to use game-based learning in conjunction with other learning activities, and to carefully evaluate game content to ensure its appropriateness for all students. Further research with larger and more diverse samples, as well as investigation into the long-term effects of game-based learning, can provide a more comprehensive understanding of its potential benefits and limitations in language learning contexts.

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