

## **Investigating students preception of gamification on vocabulary learning using Marbel**

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Submitted: 10/09/2021; Revised: 8/10/2021; Accepted: 06/12/2021

### **Abstract**

*It is critical to know and memorize the vocabulary of a foreign language if one wishes to learn it, and repetition is necessary to aid in the retention of new knowledge. This paper investigated primary school students' perception of gamification on vocabulary learning with 32 participants divided into two groups: Primary 1 and Primary 2. The research purpose on perception using Marbel for primary students and conducted with quantitative method. The results of this research show that gamification can improve students' vocabulary size with majority of students' feedback saying that they preferred Marbel than worksheet to learn vocabulary. At the same time, students were learning through their failures throughout the gameplay, they were encouraged to memorize the words. This will help students grow into independent and competent learners.*

**Keywords:** *gamification; vacabulary learning; young learners; marbel*

### **Introduction**

Vocabulary is a critical, but often overlooked, component of SLA (Folse, 2004). Studies show that paying close attention to the most frequently used 2000-3000 English words prepares students to handle a wide range of written and spoken texts. Learners can quickly acquire the basic meanings of these critical lexical items by studying word cards with L1 translations (Nation & Huston, 20013). Digitization has permeated many aspects of everyday life. Many industries, businesses, and most recently education have benefited from technological advances. Activities that used to take days or months can now be completed in hours or minutes. Product delivery efficiency has improved due to advances in technology and its application. It is still debated whether e-learning is beneficial to education. E-learning and mobile assisted language learning (MALL) are two examples of approaches that have been questioned.

Technology is now required in the classroom, according to (Yaman et al., 2015). The use of digital technology in education allows for more interaction

and social learning, which increases motivation. For educators, incorporating technological elements into teaching and learning is critical because the younger generation spends so much time interacting with digital tools or games (Yaman et al., 2015).

Through automated spaced learning, computer adaptive flashcards, and receptive/productive quizzing, mobile-assisted language learning (MALL) allows students to deliberate study of high-frequency words (Zhang et al., 2011). Word-card apps on smartphones or tablets enable L2 students to significantly expand their vocabulary outside of class. These apps frequently use scientifically validated memory retention techniques like spaced repetition, graphics or mnemonics, and scheduled quizzes (Nakata, 2011; Zhang et al., 2011). Also, technology can help make the sometimes tedious or arduous process of word-card study more motivating or affective (Abrams & Walsh, 2014; Kapp, 2012).

Adding game elements to a learning experience to make it more engaging and appealing is what is known as gamification in education. It has been proven that games and gamification can improve motivation and engagement in the classroom (Facer et al., 2004; Kapp, 2012; Malone & Lepper, 2021). Since English is regarded as an essential skill in the Information Age according to , the teaching of English is becoming increasingly important in many developing nations. Alemi (2010) reports that the use of games to facilitate vocabulary learning and build classroom motivation is becoming more widely accepted.

This paper investigated primary school students' perception of gamification on vocabulary learning. The students speak Bahasa Indonesia as their first language. Throughout their early childhood education, most of the students attended Indonesian-language schools. In accordance with their level of English proficiency, students were divided into two groups, primary 1 (7-8 year old) and primary 2 (9-10 year old). Upon the pre-research survey, the teachers asserted that it was difficult for the students to recall and retain English vocabulary that they had learned in the classroom environment. Students are not motivated to complete exercises such as multiple-choice questions or blank-filling exercises to enhance and review the vocabulary they have learned in the traditional manner. They are also apprehensive about asking clarifying questions about the meaning of words or phrases that they are unsure of. For them, doing vocabulary worksheets is a source of boredom and pain. Considering this, the researcher tried to incorporate Marbel game application in their vocabulary learning. Marbel was made especially for Indonesian young EFL students to improve their English vocabularies. Marbel has several features, such as 1) learning English with complete materials, 2) hundreds of vocabularies library, 3) equipped with voice and how to pronounce, 4) it is interactive to encourage students learn in a fun manner.

The ability to read, speak, listen, and write in a language is called proficiency (Azman & Mei, 2015). In their opinion, vocabulary is undeniably important in conveying our feelings. Vocabulary difficulties are common among students. Therefore, a coherent and rigorous vocabulary bank is critical for any language. Language learners often struggle to remember words, according to previous research. Conversational fluency and reading comprehension will suffer if a second language learner lacks vocabulary (Azman & Mei, 2015; Shen, 2003). Motivation for students' vocabulary acquisition in multimedia environments is an important part of a language and the foundation of linguistic abilities. Despite this, vocabulary is frequently overlooked in language teaching and research. Words are scarcely studied by linguists, and there are few studies that could help language teachers. Saengpakdeejit (2014) believes that developing vocabulary learning strategies could improve language competence (VLSs).

For successful foreign language learning, Nayan and Krishnasamy (2015) emphasize vocabulary learning strategy. Students with limited vocabulary struggled to communicate in a second language. Lesser-known words are skipped by learners using shallow strategies, whereas deep strategies help learners retain information. For many years, if not a lifetime, people practice their vocabulary outside of school (Krauß, 2015). Apps in mobile device can theoretically support the learning process in various ways. Language games may be time consuming for some English teachers, but they help young learners learn (Yolageldili & Arikan, 2011).

It is critical to know and memorize the vocabulary of a foreign language if one wishes to learn it, and repetition is necessary to aid in the retention of new knowledge. Nation and Huston (20013) states that it takes between five and sixteen exposures to learn new vocabulary in a second language. However, if learners rely solely on drilling, the process becomes extremely tedious and eventually saps students' interest in learning (Hu & Deng, 2007). As a result, teachers must devise methods for students to retain new vocabulary in a more engaging and interactive manner.

Despite the obvious benefits of using ICT to learn English, learners must be educated about appropriate ICT device use (Yunus et al., 2012). In spite of how technology could offer learning freedom and enhanced collaboration among students, teachers, researchers, and specialists, there is a need to ensure that the user group uses technology properly. A more critical matter, perhaps, is the effort required to develop understanding of the countless advantages of using ICT in order to allow students to study grammar and vocabulary independently. Gamification provides students with more rewarding learning opportunities and injects some excitement into the learning process (Aqsha & Pei, 2009). By changing the classroom to a mobile-based system,

students may be able to stimulate their desire to learn and improve their learning outcomes.

As a result of recent reviews and studies, gamified English language learning is gaining in popularity due to its positive effects on student learning outcomes. So, for example, a systematic review of 22 publications from 2008 to 2019 that were indexed by Scopus, Eric, and Web of Science confirms that gamified English learning has been associated with enjoyable, engaging, motivating, and fun learning experiences (Dehghanzadeh et al., 2019). When it comes to reading and listening comprehension, Zou et al. (2021) found that gamified English learning can help. Similar findings were observed in Empirical studies examining the use of Gamified English Learning tools Sun and Hsieh (2018), promoting and strengthening learning (Tan Ai Lin et al., 2018) and creating a better student learning environment (Cárdenas-Moncada et al., 2020).

One way to get students interested and excited about word learning within a playful context is by gamifying vocabulary instruction (Kingsley & Grabner-Hagen, 2018). Game-based vocabulary learning has been shown to increase student motivation and engagement, which can lead to better learning outcomes (Medina & Hurtado, 2017; Waluyo, 2020; Weissheimer et al., 2019). Nevertheless, a study found no significant differences in learning outcomes between gamified and traditional face-to-face vocabulary instruction classes that used gamification (Rachels & Rockinson-Szapkiw, 2018).

However, in-class implementation dominates gamified vocabulary learning research. In addition to the target words, one must learn a number of words to function in the English language (Stahl & Stahl, 2004). Agustín-Llach and Alonso (2017) argue that autonomous learning of L2/foreign language vocabulary is critical to student success. So, studies on gamified vocabulary learning outside the classroom are needed to see if it can improve in-class vocabulary learning outcomes. To test if providing gamified vocabulary learning support at home can significantly improve student learning outcomes in class and overall. This study assumes that the success of students' vocabulary learning by using gamification tool may apply to other students with higher levels of English proficiency. This study used Marbel, a gamification tool, in teaching vocabularies at primary school level. The study aims to investigate whether the use of a gamification-based interactive game application called Marbel could improve the level of English language vocabulary among primary school students in East Kalimantan and their perception of gamification on vocabulary learning by using Marbel App.

## **Methods**

This is a case study with a quantitative method. The research was conducted in Samarinda. This study was conducted in the middle of pandemic

situation. Participants' guardians and teachers gave their consent for using the data collected from class to be analysed and interpreted. After having tried the games, students were invited to complete an online survey about their opinions on perception towards using games in learning vocabulary and its effectiveness.



Figure 1. Marble Game App

## Participants

Two groups of students were involved. There were total of 32 students who participated in this research. Their ages were between 7 to 10 year old from Public Elementary School in Samarinda. 59% of all participants were 7-8 years old. 41% participants were 9-10 years old. Of the 32 participants, 21 (66%) were female and 11 (34%) were male.

## Procedures

First, a list of vocabulary words from Marbel were selected. The selection range from colours, part of bodies, family trees, house, transportations, shapes, numbers, and etc. Before students started playing, they had to choose the material from the game. Marbel: Bahasa Inggris mode was used to create interactive online vocabulary with students. After that, the material and instruction of how to play the game were given to the students. Then students could play the game to review the vocabulary words that they had already learned.

## Findings and Discussion

### Findings

The survey data convert to conduct statistical analysis of descriptive statistics. Calculations are made for frequencies, means, and standard deviations. A t-test is performed to determine if students from two groups (i.e., primary 1 and primary 2) had differing attitudes toward the efficacy of online games for vocabulary learning.

When students are asked whether they think the use of online games can help them remember new words, 94.7% of the students commented that they could remember new words more easily through playing guessing pictures (Table 1). In fact, students are actually drilling the vocabulary without realizing it because when they failed to answer one question in the game, they have to start the game all over again. However, when they made mistakes working on the worksheet, the chance of them reviewing the mistake will be minimal. On the other hand, when students are prepared to challenge their classmates, key ideas are being reinforced through the discussion and interaction among their group members, at the same time clearing out doubts that students might have and thus contributing to their ability to remember new words well.

**Table 1.** Marbel online games help students remember new vocabulary

	Primary 1 (N=19)		Primary 2 (N=13)	
	Yes	No	Yes	No
Do you think using Marbel online games vocabulary can help you remember new words more easily	94.7%	5.2%	92.3%	7.6%

When students are asked which method they preferred for reviewing vocabulary, 100% of Primary 1 students and 85.5% of Primary 2 students said they preferred using online games (Table 2). Interactive online games had never been used in class before, so students find it more enjoyable than revising vocabulary on paper, which is their usual method. All the student participants are digital natives who were thrilled by the excitement of video games.

**Table 2.** Students' Preference of Vocabulary Study Using Marbel vs Worksheet

	Primary 1 (N=19)		Primary 2 (N=13)	
	Yes	No	Yes	No
Do you prefer study vocabulary using Marbel online games than worksheet?	100%	0%	84.6%	15.3%

Based on the survey conducted after the implementation of games in vocabulary learning, the students rated the online games as "quite useful" (3.63 out of 5) in terms of their ability to learn vocabulary, indicating their approval of the idea of bringing educational technology into the classroom (Table 3).

**Table 3.** Usefulness of Marbel to Learn Vocabulary

	Primary 1 (N = 19)		Primary 2 (N = 13)		Significance Level (p = 0.05)	t test
	Mean	SD	Mean	SD		
How useful do you think online games help you learn vocabulary? (1=not useful, 5=very useful)	3.63	1.01	3.54	1.20	0.60	0.24
Key: 1 = not useful, 2 = somehow useful, 3 = quite useful, 4 = useful, 5 = very useful						

There are positive and negative comments about the usage of online games to learn and practice vocabulary. The overall feedback is very positive, as many students claim that they remembered the words better than by merely completing vocabulary worksheets. They find the game fun, challenging, and motivating them in learning and memorizing the words. There are several students who also said that the game is frustrating and intimidating. This might be related to their unfamiliarity of using technology in learning context and needed more time to understand how to play the game. The responses were categorized in Table 4.

**Table 4.** Students' Perception on Using Marble to Learn Vocabulary

	Primary 1 (N=19)	Primary 2 (N=13)
<b>Fun (Interesting)</b>	18 (94.7%)	11 (84.6%)
<b>Challenging</b>	16 (84.2%)	10 (76.9%)
<b>Motivating</b>	15 (78.9%)	10 (76.9%)
<b>Frustrating</b>	3 (15.7%)	2 (15.3%)
<b>Intimidating (Frightening)</b>	2 (10.5%)	2 (15.3%)

89.4% of Primary 1 and 84.6% of Primary 2 reportedly would like to try learning vocabulary using another online game. Thus, it can be concluded that the initiation of using games in vocabulary learning is a success and that there



is significant room to incorporate more online games and mobile application as learning tools to engage students in their education. Those students who expressed dissatisfaction with the online games may have been those who are less technologically savvy and felt intimidated when playing the games on their computers.

**Table 5.** Willingness to learn and practice vocabulary using other online games.

	Primary 1		Primary 2	
	(N=19)		(N=13)	
Would you like to learn and practice vocabulary using another online game aside from Marbel Educa Studio?	Yes	No	Yes	No
		17 (89.4%)	2 (10.5%)	11 (84.6%)

## Discussion

Despite the seemingly promising nature of online games, there are some disadvantages associated with gamification in education. A bad design can be more distracting than helpful, so if it isn't engaging the students with the learning activities, then it becomes more of a toy than a tool. Additionally, because the majority of gamified activities award students with tangible rewards, such as badges, fame, and money, the students may believe that they should learn only when motivated by external incentives. A third misconception is that gaming is antisocial because most games are played alone.

The results of this research show that gamification can boost student engagement and support cognitive and social development. While making their own game, they must employ a diverse range of skills and utilize prior knowledge to accomplish the task. This finding also consistent with findings of (Zebua, 2020) study on students perception toward online learning and (Cakrawati, 2017) who also said that students show positive response towards the use of online learning platforms and it mention also on (Vitianingsih, 2016) study that this educational game can assist teachers and students in changing conventional ways of learning into ways of learning simulation with game media and make it easier for students to learn to recognize symbols, count, match pictures and arrange random words. At the same time, they are learning through their own experimentation. This will help students grow into independent and competent learners.

Some students may not be interested in games and/or may be lacking in technological skill, making them feel intimidated. Teachers should guide their students by first demonstrating how to play the game, so that they do not have



to try and figure it out on their own, which may be a waste of time. Providing students with adequate technical support is especially important when they are tasked with the responsibility of making their own video games.

Students are motivated to be more engaged with their education through gamification. Based on student responses, students have focused on the enjoyable and useful aspects of online games when it comes to learning and retaining vocabulary but have neglected one crucial aspect of this experience. They remained engaged and committed throughout the process of developing the online game. They took the initiative to investigate any misunderstandings or misconceptions they had about the terminology, and they also explored the various applications and usages of the new words as they developed their own games for their peers. Through this method, student-centred learning was facilitated. It is incorrect to state that students are solely taught by their teachers. The days of teachers providing worksheets to get kids to show they understand what they're learning are over. They can make a point of inquiry, thinking over their past actions, and then implementing what they've learned.

## **Conclusion**

Gamification has been used to improve educational outcomes. The positive feedback from the game encourages students to learn more. When gamifying a course or even an activity, a clear goal must be set. Good games can boost student motivation, engagement, and cognitive development. This study shows that gamification can improve student attitudes towards language learning and can enhance learning. This study found that gamified vocabulary learning at home improved students' vocabulary learning in class. It provides an alternative way for teachers and students to learn vocabulary. While the study intends to argue the benefits of using Marbel based on statistical analysis, it is important to note that technology has limitations. More research on this study waited respectfully and for further research can find more respondents and other researchers can use other methods to develop research result. Significant progress may not be made unless students take the initiative, are motivated, and are disciplined. Therefore, the teacher must consider technology affordances and train students on how to use the app. Because gamification can create a playful context, students may be more excited to learn new words.

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