Teachers and Students' Perceptions of Using Digital Games in Improving Vocabulary at Non-English-majored Class

Trinh Thi Hang[1], Nguyen Minh Ngoc[2*], Tran Thi Thanh Huong[1]

[1] Phenikaa University, Vietnam

[2] Hanoi University of Industry, Vietnam

[*] Corresponding author's email: nguyenminhngoc@dhcnhn.edu.vn

[*] https://orcid.org/0000-0002-9962-5291

https://doi.org/10.54855/acoj.221358

Abstract

The use of gamification in education is of increasing interest. Numerous studies have explored various aspects of integrating digital games (DGs) into English language teaching and learning. This research sought to investigate teachers' and students' perceptions of incorporating DGs in improving vocabulary for non-English-majored students at Phenikaa University, Vietnam. This cross-sectional study was completed with a structured survey of 30 lecturers and 150 students, alongside in-depth interviews with some randomly-selected respondents from both groups. The findings revealed that these two groups of participants mostly shared positive attitudes toward DGs. The teachers were aware of the importance of DGs as a modern and appealing approach to teaching vocabulary; however, they were reluctant to use them frequently because of time constraints, distraction, and technological complexity. With regard to the students, most of them believe in the effectiveness of digital games as learners. However, they reflected that occasional class gaming-learning could be a more appropriate schedule. Contents that digital games can help most effectively with learning English tend to focus more on some aspects of vocabulary. The findings are of great value in giving educators and students a profound understanding of both the positive and negative impacts of using DGs to facilitate learners' vocabulary learning.

Introduction

It is undoubted that to achieve communicative competence in English, learners have to expand their vocabulary (Schmitt, 2000). Therefore, it is of paramount importance for teachers to facilitate students' vocabulary acquisition. In the current digital era, digital games (DGs) have emerged as a tool to teach vocabulary to English as a Second Language or English as a Foreign Language learners since they have the potential to assist students in acquiring vocabulary better (Rasti- Behbahani, 2021). It is suggested that the notion of the use of DGs in teaching greatly depends on teachers' perceptions. In other words, when teachers have negative perspectives on the implementation of DGs, they may be less inclined to integrate them into their teaching (De Grove, Bourgonjon, & Van Looy, 2012). Hanghøj and Engel Brund (2011) also emphasized the significance of teachers' perceptions by indicating that teachers select and implement DGs in the classroom to help the teaching and learning process. However, it is impossible to neglect

the perceptions of students who directly use DGs in the class. This prompted the present study to gain insights into teachers' and students' perceptions of incorporating DGs into teaching English vocabulary in a university.

Literature review

Definition

A common definition of DGs comes from Schneider (2012), who defined DGs as video and console games, computer games, handheld games, and apps, which can be online or offline. Prensky (2001) added that the major factors, namely rules, goals, outcomes, feedback, competition/ challenge, interaction, and representation or story, characterize DGs (as cited in Schneider, 2012). Furthermore, the adoption of DGs in education can help improve learners' acquisition of academic knowledge and language skills (Mayer, 2014). In this present study, DGs refer to computer games, video games, online games, and even apps used to facilitate students' learning since it focuses on teachers' perceptions of using DGs in teaching English vocabulary rather than the differences among digital devices which supply the games.

Theoretical frameworks towards digital games

Regarding a learning theory to support digital game-based learning, constructivism has been cited frequently (Kidd, 2010). According to this theory, learners construct their understanding and knowledge of the world actively, and they also learn cooperatively and socially by reflecting on their own learning experiences (Schrier, 2006). Kidd (2010) agreed with Schrier (2006) and further indicated that learners can construct meaning with the help of technology tools, and DGs are considered one of these tools. In addition, DGs offer students numerous opportunities to take control of their learning process (De Grove, Bourgonjon, & Looy, 2012).

Teachers' perceptions of the implementation of digital games in teaching English

The results of previous studies confirm that teachers' perceptions and attitudes toward DGs might have an effect on their decision on whether these games should be incorporated in the classroom (Sardone & Devlin-Scherer, 2010). Several studies have explored teachers' perceptions of integrating DGs into teaching English. For instance, Chen, Chen, Chen and Yang (2012) researched teachers' perspectives on utilizing video games for language learning and revealed that most of the participants believe DGs have more positive impacts on learning receptive language skills such as listening, reading and vocabulary than productive skills, namely speaking and writing. Surprisingly, in Anyi's (2019) study, although the teachers surveyed had never implemented DGs in their English vocabulary lessons, all of them still viewed these games as useful tools to help improve their students' vocabulary acquisition. They stated several reasons for their belief in the effectiveness of DGs in teaching vocabulary. For example, the games were fun, interactive, and easy to use, which might fascinate learners and then boost their vocabulary retention.

Although numerous teachers are passionate about using DGs, they still suffer disadvantages

that hinder them in their efforts to implement DGs in the classroom. The lack of knowledge and the educational uses of DGs is deemed one of these drawbacks (Egenfeldt- Nielsen, 2006). A valuable concern that Vogt (2018) raised is that technical difficulties, such as the shortage of Internet connections and software and hardware issues, may arise and negatively affect the process of teaching and learning in classrooms if DGs are integrated. Finally, Li (2013) added that the lack of time to create and design games, the payment of the expenses of using games, and the failure to select games related to the curriculum are also seen as disadvantages in integrating DGs into the lessons.

It can be seen that the application of DGs in the field of teaching the English language brings enormous advantages and thus, a range of studies aimed at exploring teachers' perspectives on the use of DGs in the classroom. Alsuhaymi and Alzebidi (2019) examined Saudi teachers' perceptions of DGs and the obstacles to incorporating this type of game into their teaching. Its results indicate that the participating teachers in middle schools perceive DGs to be valuable in their teaching. It is surprising that none of them implemented these games for teaching purposes. Moreover, the barriers to adopting DGs are attributed to three main factors: the shortage of facilitating conditions, lack of awareness of the benefits of DGs, and lack of games that suit Saudi peculiarities and curriculums.

Students' perceptions of the implementation of digital games in learning English

There has been an interest in studying students' opinions about technology-based games used in classrooms at schools, whereas only a few have looked into university undergraduates' beliefs and feelings about games given in class. Mills and Thanyawatpokin (2021) investigated the opinions of 377 students at two Japanese universities and found out that most of them, whether game players or non-game players agree that games can be a learning tool. However, they do not think that games can help with critical thinking. Games are reported to be useful for linguistic knowledge. The authors also confirmed the students' positive perceptions of game usage and linked that to their high appreciation of the benefits of learning via games (Mills and Thanyawatpokin, 2021, p.208). Chik (2012) and Gabarre and Gabarre (2009) showed that students find games a resource for interaction and a means to self-direct their study. Studying opinions of young students toward digital educational games, Xie et al. (2021) found that these learners often show more positive perceptions than parents and teachers. The authors also revealed that students like to use digital educational games designed for teaching "difficult and abstract concepts" and that learning via digital games is reported to be unsuitable for students of higher grades who are often more occupied with exam preparation.

Another research investigating students' perceptions of digital games at St Clare's College in Malta by Camilleri & Camilleri (2017) showed positive results among students. To be more specific, students appreciated the benefits that DGs bring to their learning yet confirmed the difficulties they encountered while using them. Besides, Yip and Kwan (2006) conducted a study on the usefulness of DGs in vocabulary learning. The participants in this study are both teachers and students in a university. The results show that DGs are considered to be an effective tool for learning vocabulary by not only teachers but also students.

Research gap

In recent years, research has also focused on how teachers and students perceive the use of DGs in language classrooms. For example, Yip and Kwan (2006) conducted a study on the perceptions of both students and teachers toward the usefulness of DGs in vocabulary learning. Chan& Lo (2022) also carried out research within university English classes in Hong Kong on how tertiary teachers and students perceive the use of DGs. However, the existing literature review is mostly confined to the use of DGs in general but not in the specificity of teaching vocabulary in English Language classrooms in higher education, especially in the setting of tertiary education in Vietnam. Therefore, to respond to this gap, the present research hopes to shed light on teachers' and students' perceptions of the integration of DGs in teaching English vocabulary at the tertiary level. The current study seeks to answer two following research questions:

a) What are teachers' perceptions of using digital games in teaching English vocabulary?

b) What are students' perceptions of using digital games in learning English vocabulary?

Methods

To answer these research questions, a mixed research approach is employed as it is frequently used to study perceptions through verbal or visual expressions (Salmons, 2016), and the rich data about participants obtained from this method help deepen our understanding (Dörnyei, 2007).

Pedagogical Setting & Participants

The study was conducted at a private university in Hanoi in the first semester of the academic year 2022-2023. Each class has about 40 students whose current English language is of the pre-intermediate level. Students have five English lessons per week, and each lesson lasts 50 minutes. Therefore, it is crucial to explore both teachers' and students' perceptions of the use of DGs to facilitate vocabulary teaching and learning. Participants of the study were 30 lecturers and 150 students who participated on a voluntary basis from a private university in Hanoi. The teachers had a quite good grasp of the use of DGs after participating in a small workshop, and some of them also had the experience of using DGs. Hence, when they were selected as participants in the research, they would be able to provide rich insights into the topic. Besides, the participating students are relatively computer-literate and also had a profound experience with DGs in learning English, as they used them frequently throughout online lessons during COVID-19.

Design of the Study

In order to fulfill the objective of this research, the researchers employed questionnaires and interviews as data collection tools. A questionnaire was applied to assess the effectiveness of the question of interest as it is "a useful instrument for gathering factual information, data on

attitudes and preferences, beliefs and predictions, opinions, behavior, and experiences-both in the past and present time" (Cohen et al., 2011). Besides, the interview is also adapted to generate more data for this research. The interview is a particularly useful data-collection tool because of the in-depth information that can be accessed through it (Tashakkori &Teddlie, 2012). In other words, the interviewees feel free and comfortable answering the open-ended questions without being judged by the interviewers.

A study needs to be piloted to "ensure the high quality (in terms of reliability and validity) of the outcomes in the specific context" (Dörnyei, 2007, p.75). Aware of the significance of the piloting phase, the research was piloted to check whether the questionnaires and the interview questions had any problems and gain experience in carrying out in-depth semi-structured interviews. Firstly, a colleague from the institution was asked to help with checking mistakes in the questionnaire and interview protocol, like grammar mistakes. Then the study was piloted with another two colleagues and 10 students to detect any words or phrases that they might not understand or feel confused. After receiving many helpful comments from colleagues and students, the author edited interview questions and finalized the details in the questionnaire.

Data collection & analysis

Data for the study were collected through questionnaires and interviews. To be more specific, two sets of questionnaires adapted from Chan& Lo (2022) were used to investigate teachers' and students' perceptions of using digital games to improve vocabulary. Each questionnaire was designed to consist of two sections, which first includes the participants' personal backgrounds, followed by the second section documenting questions about students' or teachers' perceptions and preferences towards the experience of gamifying classrooms. A five-point Likert scale was utilized to gauge opinions: 1. strongly disagree, 2. disagree, 3. don't know, 4. agree, 5. Strongly agree. The questionnaire was created on Google Forms and delivered to students in five different classes as well as teachers. About students-participants:107 students answered the survey. 74.8% of respondents are 19 years old. 63.6% are male, 31.8% are female and 4.7% are reported to be of another gender. More than half (54.2%) said their language proficiency is fair. 38.8% admitted that their English proficiency is poor. 10.3% are good, and only 4.7% agree that their English is excellent.

In order to further explore the perceptions of students and teachers towards the use of DGs in improving vocabulary, semi-structured interviews were also employed. Data for this study included 10-minute semi-structured interviews with seven randomly selected students and teachers. Since the participants' English proficiency was good and they also wished to be interviewed in English, the interviews were held in English. Moreover, the interviews were audio-recorded, which produced objective data and helped researchers review, replay, and transcribe to yield a record of interaction (Bailey, 2006). During the research, the respondents were given pseudonyms to ensure their privacy.

Pieces of evidence from all the recordings were carefully noted and categorized into different cases. Any examples belonging to new groups would be taken into consideration. Meanwhile, findings from the questionnaires were compared (and contrasted) with the findings from the interviews to find out teachers' and students' perceptions of using games in improving

vocabulary as well as the advantages and disadvantages of this method.

Results

Teachers' perceptions of the use of DSs in teaching English vocabulary

Teachers' perceptions of the benefits of using DGs in teaching vocabulary

When asked about the DGs they know, all the teachers considered Quizizz and Kahoot as the most popular games. Besides, most of them (70%) have heard of Wordwall while only about 15% know Gamekit, Quizlet and Blooket (Fig. 1).

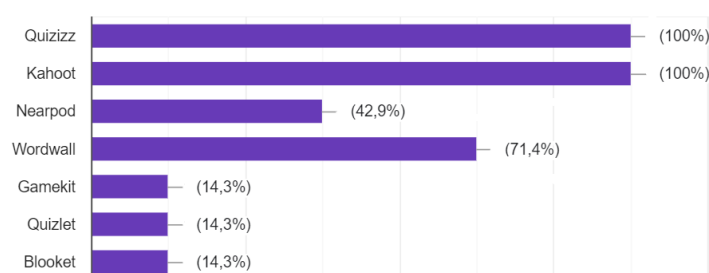Choose the digital games you know

Quizizz	(100%)
Kahoot	(100%)
Nearpod	(42,9%)
Wordwall	(71,4%)
Gamekit	(14,3%)
Quizlet	(14,3%)
Blooket	(14,3%)

Figure 1. The popularity of digital games

The statistics also demonstrate that all teacher respondents have experience using DGs in their classes. The questionnaires show that none of the respondents claim they have ever incorporated games into their vocabulary teaching. Nevertheless, it is surprising that more than 85% use games in classes only a few times every semester. If there are 15 weeks in every semester, it can be implied that only about 15–30% of their total class time has been devoted to the integration of DGs. About 14% report that they include DGs in teaching English vocabulary for more than half of the semester, meaning this group of respondents has spent half of the class time using games in classrooms (Fig. 2).

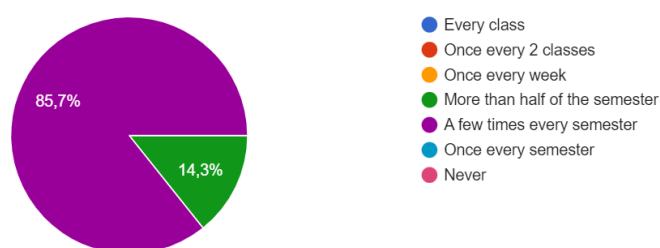How often do you use digital games in teaching English vocabulary?

85,7%
14,3%

- Every class
- Once every 2 classes
- Once every week
- More than half of the semester
- A few times every semester
- Once every semester
- Never

Figure 2. Frequency of the usage of DGs by the teachers in each semester

All the respondents agree that DGs are an effective means to help non-English-majored students

learn English vocabulary better, with 57,1% ranking the effectiveness of using DGs as 4 out of 5 and 42,9% ranking it as 5 (Fig. 3).
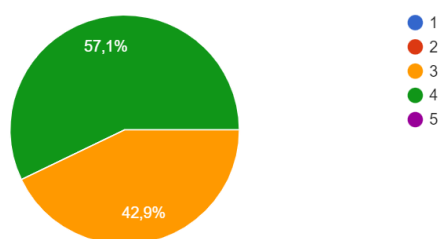

Figure 3. University teachers' perception of gamification toward students' effective learning

The main themes which emerged in the analysis of teachers' perceptions of the advantages of incorporating DGs included engagement, learner motivation, and digital literacy (Fig.4).

Figure 4. The benefits of using DGs in teaching English vocabulary

Engagement

In particular, the engagement was analyzed from sub-themes, namely entertainment and design. From the data, engagement emerged as a considerable benefit. A majority of the respondents (85,7%) claim that DGs helped learners engage more in the lessons.

As anticipated, four out of five interviewed participants showed favor for the entertainment feature of DGs, which engaged their students in the lesson. Below are two typical responses of Teacher 1A and Teacher 2A, respectively:

> *"I think it is fun to play DGs. Students can learn and play at the same time in a fun environment. It is contrary to the traditional way, which is giving students a long list of new words and making them remember on their own. Therefore, students might be bored and discouraged from learning vocabulary."* (Teacher 1A)

> *"DGs like Quizizz use fun music and memes to create a stress-free and energized atmosphere. So they bring enjoyment to learners and increase participation in the lesson."* (Teacher 2A)

Another factor contributing to learners' engagement was the design of DGs. Approximately

60% of the teachers agree that DGs are well-designed with colorful animation and music. In particular, two interview teachers expressed their appreciation of the attractive design of the games.

> *"I think DGs such as Gamekit and Quizizz are colorful and well designed with animation, sounds and music, which keeps students more engaged when they play these games."* (Teacher 3A)

Teacher 4A agreed and added:

> *"So DGs offer me a wide range of exercises like gap filling or matching pictures with words or matching words with their definitions, crosswords, and even watching videos and answering questions. Teachers can use them alternatively in lessons so that their students may not get bored."*

Learner motivation

Another benefit of the integration of DGs that helped improve students' vocabulary acquisition is motivation. A large proportion of teachers (70%) is in favor of supporting DGs for the increase in motivation. Teacher 5A shared:

> *"First of all, DGs will enhance student motivation to learn new words when there are ranks on the leaderboard. It means that if students want to get the highest scores to see their rank on the leaderboard, they have to get the correct answers."*

Teacher 2A also expressed her point of view:

> *"I think DGs help students become more interested in learning new words and provide a competitive environment, which encourages them to reach higher ranks than their peers."*

Digital literacy

Approximately 60% of the teachers state that DGs help develops both teachers' and students' digital literacy. In particular, two out of five interviewees mentioned the development in digital literacy of both teachers and students as a benefit of incorporating DGs into their lessons. In other words, their digital literacy will also be promoted when they explore how to use these games or operate digital devices successfully. Teacher 1A explained as follows:

> *"In my view, the use of DGs also helps develop teachers' digital literacy. Specifically, we have to choose from different games and spend a lot of time finding out their features before integrating them into our lesson. For example, Quizizz will be extremely convenient and fast when teachers know how to use the feature "import questions from a spreadsheet". It helps automatically generate the questions from a list of questions and answers in the excel file prepared in advance. Therefore, by learning how to use DGs, teachers' digital literacy will be improved, and they will also be more confident when using other ICT tools."*

Teacher 3A added the third benefit of using DGs to students:

> *"I think it will increase students' digital literacy. To play the games, students have to interact*

directly with various electronic devices such as mobile phones, iPod touch, iPad, or tablets. They will also have the chance to find out how to access the Internet, sign up for DGs, and play them. It will somehow increase their digital literacy."

Teachers' perceptions of the drawbacks of using DGs in teaching vocabulary

The results from the questionnaire suggest that 81.4 % of the teachers considered time constraints as a major drawback, followed by 57.1% who chose distraction, and 42.9 % of the respondents perceived technical difficulty. 'Lack of training' and 'incompatibility of DGs to the course' appeared not to be a problem for teachers in the incorporation of DGs into English lessons, with 12.1 % and 11.1% of responders, respectively.
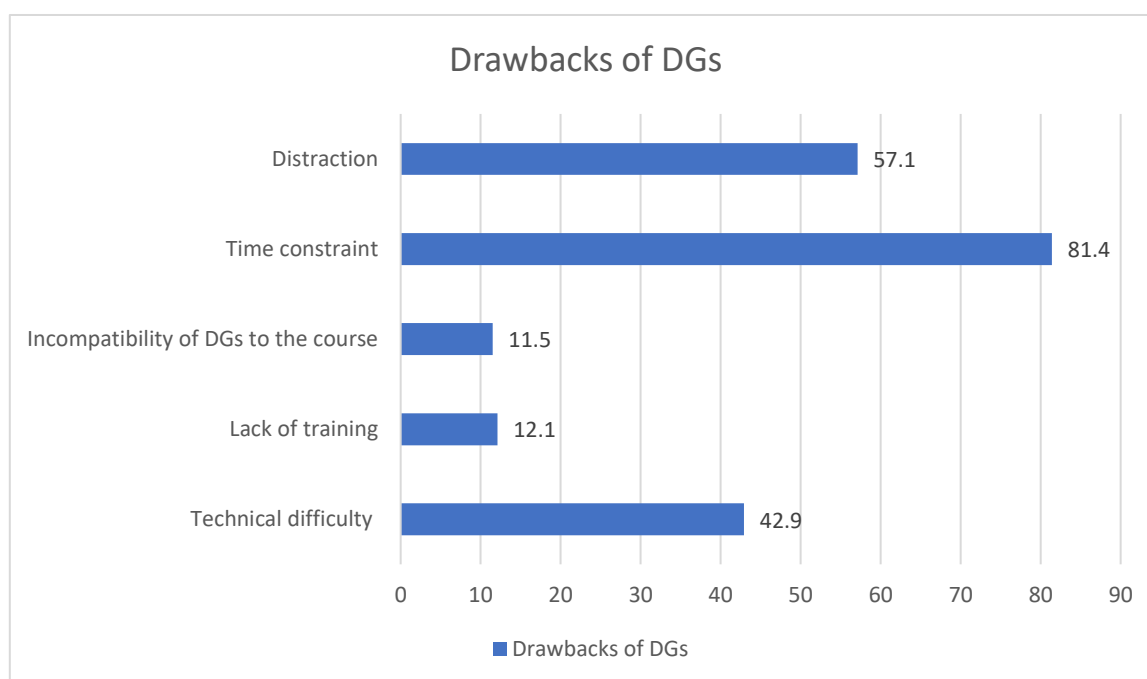

Figure 5. Drawbacks of using DGs in teaching English vocabulary

When being further interviewed, Teacher 1A said:

"It is very time-consuming for both students and teachers. First, when it comes to lesson planning, I have to spend a lot of time preparing and designing games. Also, my students have to connect to the Internet, log in or even sign up for the game. This whole process takes a large amount of time."

Teacher 2A revealed some of the students are good students, and of course, they will get access to the game assigned and play. However, some students may use their phones for other purposes, like getting access to Facebook or playing other games on their phones, which distracts them. Moreover, distraction was an obvious disadvantage because teachers may not know what students would do with their phones.

Besides, all the respondents indicated that they were discouraged from integrating DGs in teaching vocabulary by technical difficulties such as Internet connection and lack of electronic devices to access DGs. For example, Teacher 3A pointed out:

"The major problem is related to the Internet connection. Sometimes the Internet is unstable and slow, which makes the games disrupted. So, this game heavily depends on connection and technology. I even ask the technical support team to assist, but there is no use. I often get bored and cancel the plan of playing games with the class."

Teacher 1A added:

"Some of my students may not have proper smartphones to play DGs, so they cannot play the games, or they may face some technical problems, for example, the games cannot load smoothly."

Students' perceptions of the use of DSs in learning English vocabulary

Students' perceptions of the benefits of using DGs in learning vocabulary

The survey asked students about their favorite digital games for learning vocabulary. It is shown that nearly half of them prefer Quizizz (45.8%), about a third like Kahoot (38.8%), and nearly a quarter choose Quizlet (22.4%) as their favorite one (Fig.6). The results quite correspond to the teachers' perceptions, because in our survey on teachers' knowledge of digital games, all of them were familiar with Quizizz and Kahoot (see Fig. 1 above).
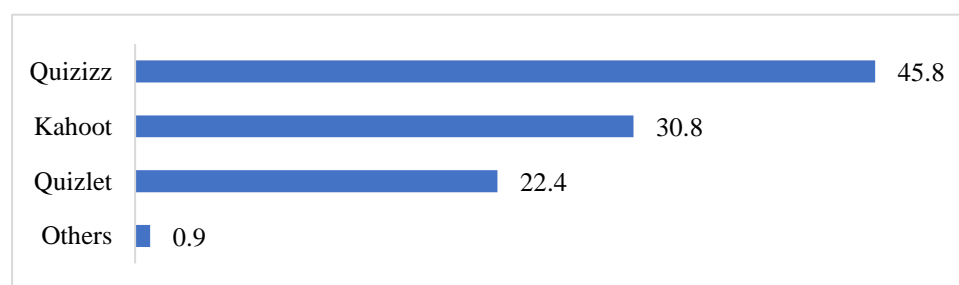

Figure 6. Students' favorite digital games for learning vocabulary

Regarding students' perceptions of digital games' effectiveness in learning, the survey result coincidentally goes in line with Mills and Thanyawatpokin's findings. In total, most of them either strongly agreed or somewhat agreed that "learning through digital games is effective as a learner" (41.12% plus 42.06%, respectively). 14.2% of the students did not know whether digital games are effective in learning. Only some students strongly disagreed (1.87%) or somewhat disagreed (0.93%) that these games are good for learning (Fig.7).
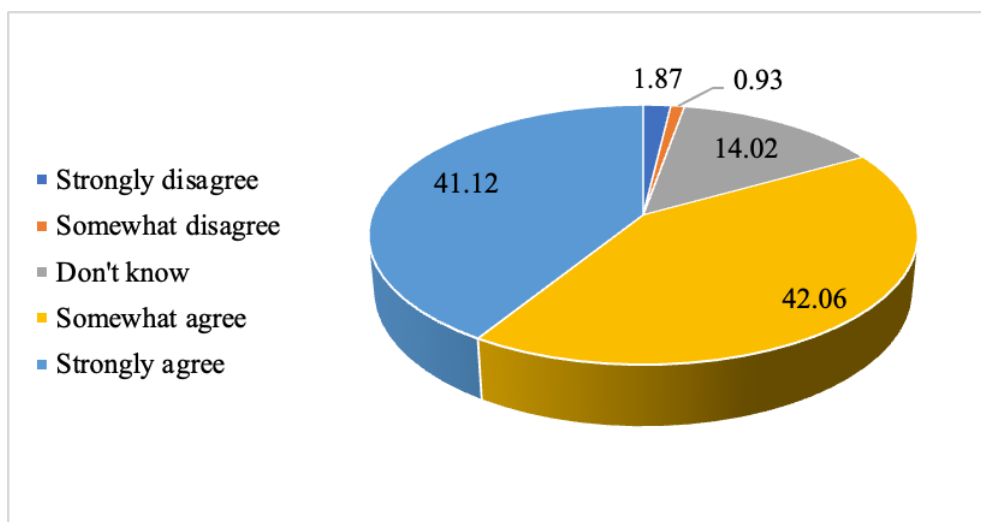
Figure 7. Opinion on the effectiveness of learning through digital games as a learner

However, it seems that students did not think having games in every class was a good idea because just 30.8% of them agreed, and 17.8% strongly agreed with that option. Nearly half of respondents preferred playing games in class sometimes only. Additionally, 15.9% strongly agreed with the option of occasional class gaming (Fig.8).
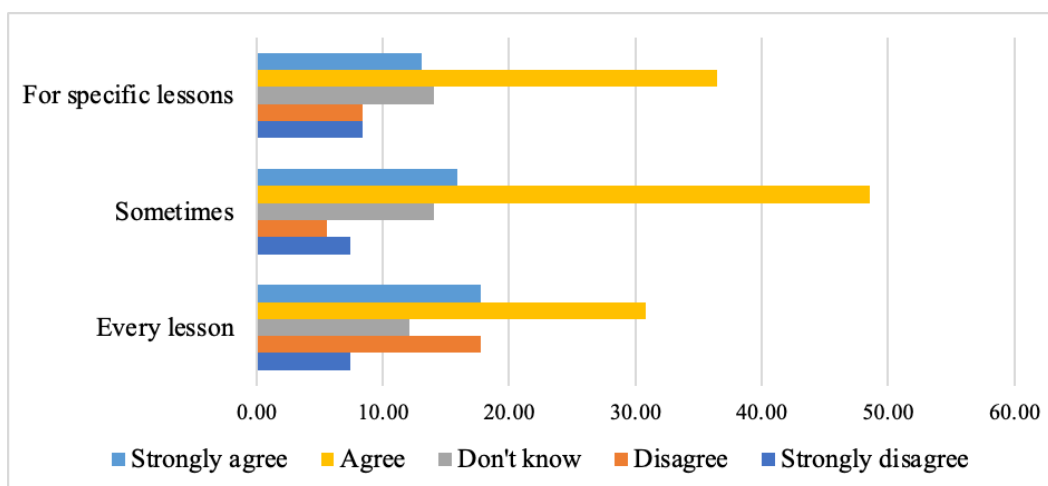

Figure 8. The appropriate time for digital games in teaching and learning

Our further investigation into the students' perceptions of gamification's advantages in learning shows that the contents that digital games can help most effectively with learning English tend to focus more on aspects of vocabulary. The majority of students (76.64%) believe that those types of games are worthwhile for comprehending the meaning of words. Nearly half of them (49.53%) think that class games are beneficial for learning how to use vocabulary items. Roughly 38% of the students attach the usefulness of digital games to their learning of word formation, word family and pronunciation. Only one of the respondents (0.93%) think that digital games can be effective in learning both grammar and pronunciation, as well as new words and how to use them in grammar and communication (Fig.9).
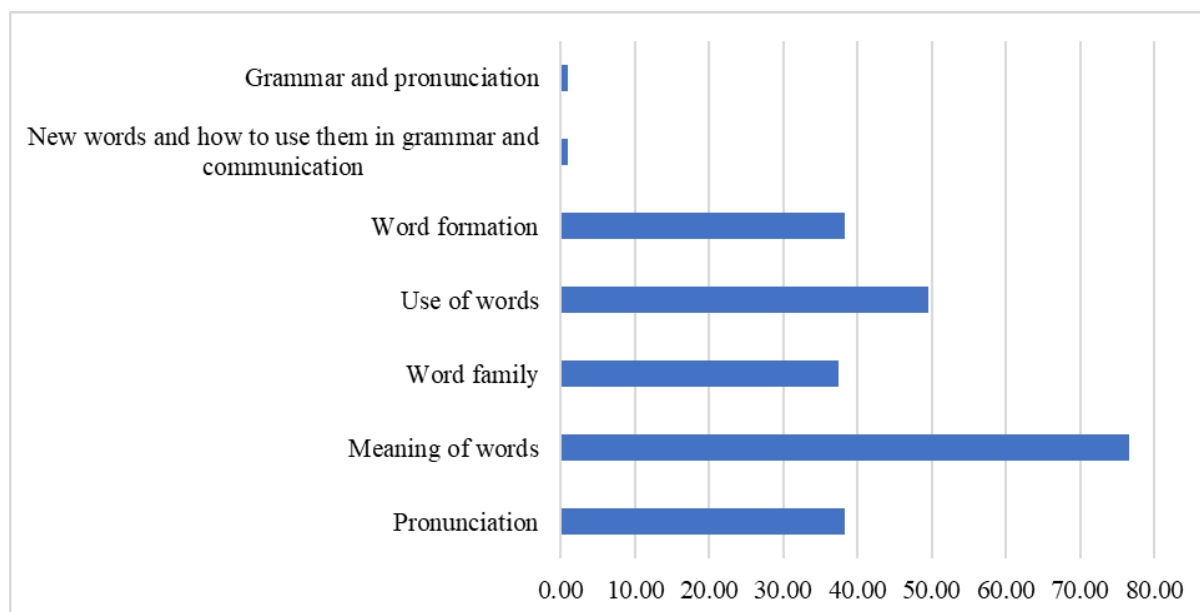
Figure 9. Contents that students find the most effective when learning with digital games

In terms of students' perceptions of gamification benefits towards learning English vocabulary, greater tendencies can be found in the view that "digital games help me remember words easier and faster" (with 39.3% strongly agree and 39.3% somewhat agree) and "digital games create more fun for the lesson (49.5% strongly agree and 27.1% somewhat agree). Besides, a majority of respondents strongly agree (36/4%) and somewhat agree (36.4%) that this way of learning gives them some comfort. 46.7% strongly agree, and 38.8% partially agree that "visuals and colors are more interesting than reading the words, " proving the graphic advantage of digital games in arousing students' interest in learning (Fig.10).

The data collected from in-depth interviews with seven students also support the above findings. As a student stated, "playing games during class hours motivates students to learn" [Student 5B], they [the students] "would love participating in these kinds of activities so the lectures are [more] interesting [to us]" [Student 1A]. Student 3B said, "The teacher's games are fun and designed with eye-catching items and animations which can easily catch students' attention". Student 6B believed that "Moving shapes and appealing sounds create an active environment that can improve people's memory". Another student added that "*games help students remember vocabulary better*" [Student 7B], and he reflected that "*New words learned during games are remembered longer and better than when students sit still and learn vocabulary on paper*" [Student 7B].   ].
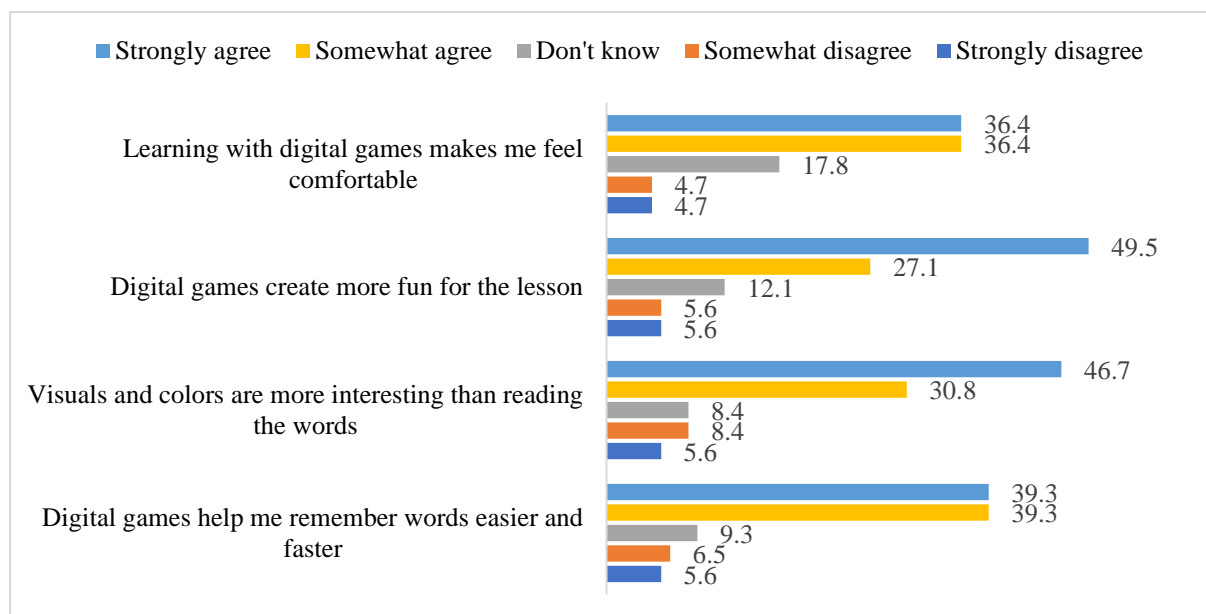
Figure 10. Students' views on the benefits of using DGs in learning English vocabulary

Students' perceptions of the drawbacks of using DGs in learning vocabulary

The data in Figure 11 presents that most students did not find learning vocabulary through games ineffective. Only a few students strongly agree that learning through games is time-consuming due to technical problems (5.6%), and only 12.1% of them agree with that statement. Even fewer of them strongly agree that their device is not suitable for playing games or that games are not suitable to their level. Additionally, only 4.7% strongly agree and 8.4% agree that games and lesson content are unrelated. However, it is noticeable that while quite a lot of teachers (42.9%) found that technical difficulty is a disadvantage, only a very small number of students (strongly) agreed on the problems related to technical conditions.

Our in-depth interviews found only two opinions mentioning the downside of digital games when Student 4A said that "*students have to spend time waiting for their teacher to set up devices to access the games*" and Student 7A stated that "*sometimes I play and I don't know the words, too many [new words]. I can't remember*".
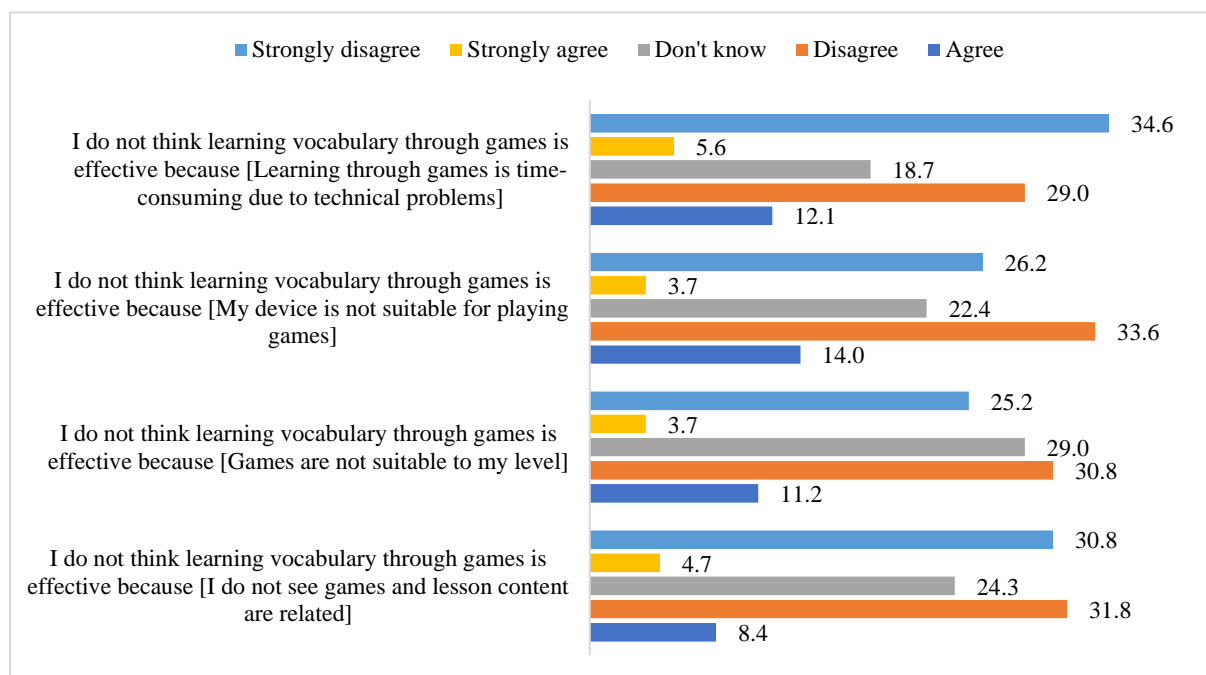
Figure 11. Students' views on the drawbacks of using DGs in learning English vocabulary

Findings and discussion

Teachers' perceptions of the use of DSs in teaching English vocabulary

Teachers' perceptions of the benefits of using DGs in teaching vocabulary

The present study investigated teachers' perceptions of the benefits and drawbacks of integrating DGs into teaching vocabulary. Surprisingly, even though all the participants perceived the advantages of incorporating DGs into vocabulary teaching, a large proportion of them used the games in classes only a few times every semester. This result is consistent with the previous finding published by Noraddin and Kian (2014), which indicated that although a majority of teachers never or seldom used DGs as a part of their lessons, they still gave positive responses to the benefits of the utilization of the games. This study explores 30 teachers' perspectives on the advantages of the use of DGs in teaching English vocabulary. The data showed three main advantages: engagement, motivation, and digital literacy.

To begin with, engagement is perceived to be the foremost benefit. The participants explained that DGs kept students involved in the lesson since they learned in a fun and enjoyable environment, and the games were well-designed (Tran, 2013). Teachers also list the former in the previous studies on the positive impacts of using DGs as a contributing factor to student engagement (Ruggiero, 2013; Alsuhaymic & Alzebidi, 2019). Additionally, Alsuhaymic and Alzebidi (2019) claim that interaction generated by playing DGs also makes students more engaged. However, this factor was not found in the present study. The reason might be the

respondents' unawareness of it. In terms of the design of DGs, which is a newly emerging aspect, it has not been indicated elsewhere in the literature as an element of learner engagement. The data suggested that it might keep students engaged as sounds, images, audio, and videos are added to create questions. This may support the results of the prior research, in which respondents mention that visual and oral texts can assist students in successfully recalling word forms and meanings (Rasti-Behbahani, 2021; Yip & Kwan, 2006). It can be inferred that well-designed DGs can be considered as a medium to foster students' vocabulary learning.

The second benefit of the incorporation of DGs into teaching vocabulary is motivation. The participating teachers explained that the competition for high ranks on the leaderboard of DGs helped increase students' motivation to learn more, which has been widely acknowledged in the literature (Huizenga et al., 2017; Ruggiero, 2013). In other words, students are motivated to expand their vocabulary because of the competition to win the game. It can be seen that the respondents perceived competition as a crucial element of DGs contributing to student motivation to learn.

The teachers viewed digital literacy as the last advantage of implementing DGs in teaching English vocabulary. Teachers believed that their digital literacy would be improved by investing a great amount of time and effort in becoming proficient at using DGs to teach vocabulary. This new finding has not been reported elsewhere in the literature. Regarding learners, the participating teachers thought that students could also develop their digital literacy by finding out how to play DGs successfully. In other words, it allows students to demonstrate and enhance their understanding of operating digital devices and games. This is consistent with Yunus's and Hua's (2021) suggestion about the value of DGs to the development of students' digital literacy.

Teachers' perceptions of the drawbacks of using DGs in teaching vocabulary

Although the integration of DGs in the classroom has its benefits, its negative effects on learning and teaching should not be neglected. The data collected from the teachers show three disadvantages of using DGs in teaching vocabulary: time constraints, distraction, and technical difficulties.

Firstly, the most noticeable point in the list of drawbacks is time constraints. In particular, the teachers believed that the use of DGs in the classroom required teachers to spend a considerable amount of time preparing, which increased teachers' workload. Moreover, they also revealed that it was time-consuming for students to access the games to set up before playing. This aligns with the study conducted by Vogt (2018) on teachers' perceptions of the disadvantages of the use of DGs. Another problem of time constraints related to technical difficulties was not mentioned in this study as a possible drawback as concluded in Cheng's (2018) study. The reason may be simply the participants' unawareness of this negative influence. The teachers stated that when several functions in the apps of DGs could not be operated effectively, it was time-consuming to fix the issue as well (Cheng, 2018).

Another disadvantage of using DGs in teaching vocabulary is a distraction. The participating teachers in this study were concerned about the problem of distraction when using DGs in their vocabulary teaching. To be more specific, they believed that students might be distracted and become off task when they were allowed to use their phones connected to the Internet. It can

be seen that this makes the class more difficult to control and manage. This finding confirmed Ruggiero's (2013), Vogt's (2018), and Alsuhaymi and Alzebidi's (2019) previous results that distraction can actually be a threat to classroom management in general.

Finally, in terms of technical difficulties, an item emerging from the data is in line with previous findings in the literature. For instance, exactly as Cheng (2018) demonstrates in his/ her study, teachers perceive unstable Internet connection as a common problem when using DGs in class. This technical problem impedes lesson progress and causes high stress for teachers and students. Similarly, a lack of electronic devices to access DGs emerges as a technical difficulty. The respondents shared that several students might not have appropriate phones with essential functions to play, which causes the cancellation of the game or interruption while playing. It can be seen that this difficulty is a newly emerging theme since previous studies have not mentioned it. They just indicated that there was a lack of student access to DGs due to no internet access or the restriction by the school district (Vogt, 2018; Cheng, 2018).

Students' perceptions of the use of DSs in learning English vocabulary

Students' perceptions of the benefits of using DGs in learning vocabulary

Our findings show a coincidence between the students' and teachers' choice of favorable digital games because both reported that Quizizz and Kahoot were their preferred games in class. It means these games are frequently utilized and suitable for learning and teaching English lexical items. Additionally, the study results on the appropriate time for digital games in teaching and learning showed a stronger tendency toward an acceptance of having games in class, whether sometimes for specific lessons only or for every lesson. They seemed to have experienced different sessions of digital games during their courses. Thus, they could see that too frequent games may somehow interfere with their learning negatively, which is why they suggest a scattered time for gaming learning.

Students obviously appreciated that digital games are a good way of learning vocabulary in class because they asserted their effectiveness as learners of English. Our research results confirm the usefulness of digital games in learning vocabulary. The respondents' opinions reveal that learning by playing can possibly help them understand word meanings better and memorize new words, their parts of speech, the networks of words, and, more importantly, their structures. Bolliger et al. (2015) found "they [students] thought it would make learning more interesting and active, assist in memorizing English vocabulary, and help with understanding the foreign language" (Bolliger et al., 2015, p.14). These good sides of digital gamification in English learning are quite universal. York J. and William deHaan J. (2018) stated, "gaming was considered an authentic use of English, and students generally felt responsible for their own learning" (York and William deHaan, 2018, p.33).

Our findings about students' views on digital games' benefits (Fig.10) support those collected from the survey on teachers' perceptions (Fig. 4) in some ways. Those games help to create students' engagement, and motivation and pleasantly facilitate their learning accordingly. Vocabulary learning is reflected to be easier, and faster, giving learners more fun, comfort, and

interest. Our results are also consistent with those of Bolliger et al. (2015), when they mentioned: "students perceived that digital game use would make learning English easier" (Bolliger et al., 2015, p.14). More specifically, those authors found "the greatest number of students mentioned enjoyment and motivation as potential advantages to using digital games in English-language learning" (Bolliger et al., 2015, p.14).

Students' perceptions of the drawbacks of using DGs in learning vocabulary

Our research found only a very small number of students who asserted the negative sides of digital games. Their low affirmation on the drawbacks of digital games, namely technical difficulty, suitability of games and incompatibility of digital games to the lesson content, continues to support our findings on students' high positive appreciation of digital games and goes in line with findings from the survey on teachers' perceptions regarding the drawback of digital games. Perhaps, those respondents in our research were new students and gamified activities at their English classes are fresh and appealing to them. Most respondents appraised the use of digital games and did not find any remarkable drawbacks in playing them.

In all, gamified-learning is perceived as effective in terms of vocabulary achievement. It possibly paves the way to sustainable learning in a life-like style; thus, it promotes deep learning.

Conclusion

This research sheds light on university teachers' and students' perceptions of DGs in teaching and learning English vocabulary. Our findings prove that once adopted properly, DGs are perceived to enhance teachers' and students' digital literacy, engagement, and motivation, which are paramount to helping students acquire and retain vocabulary better. On the other hand, using DGs is believed to conceal negative impacts that impede teachers' use of DGs in the classroom, namely technical difficulties, time constraints, and distraction.

Regarding students' perceptions, there was a pretty strong belief in DGs' effectiveness and usefulness in learning vocabulary. However, they revealed that class gaming-learning should be on an infrequent schedule. DGs are reflected to be of most help in studying certain aspects of the lexical items, i.e., word meaning, word formation, word networks, and word structures.

The study has looked into specific cases of survey participants from Phenikaa university in Hanoi, Vietnam. Thus, it cannot communicate about all other circumstances of DGs usage in higher education. Despite favourable tendencies of the survey participants' opinions on digital games, relationships between specific game contents and their effectiveness were not discussed. Future research should explore learning styles, strategies, and kinds of digital games.

Despite the above limitations, this study supplies useful information that helps broaden our understanding of university teachers' perceptions of incorporating DGs into teaching English vocabulary. In particular, teachers will be aware of the advantages of DGs and consider using them in their teaching to enhance learners' vocabulary retention in new and fun ways. Moreover, regarding the deterrents against integrating DGs in the classroom, when teachers are aware of them, they can find out some feasible way to alleviate the problems so that both teachers and

students can benefit more from the employment of DGs. Finally, officials of higher education management and policymakers should provide teachers with training courses or workshops to help enhance their capacity to select and adapting DGs efficiently in the classroom.

References

Alsuhaymi, D., & Alzebidi, A. (2019). Saudi teachers' perceptions regarding adopting digital games in teaching practice. *The Turkish Online Journal of Educational Technology, 18*(4), 62-69. Retrieved from https://files.eric.ed.gov/fulltext/EJ1232268.pdf

Anyi, C. L. (2019). Evaluating the effectiveness of digital game-based learning in second language vocabulary acquisition. Retrieved from http://hdl.handle.net/1853/62100

Bailey, K. M. (2006). *Language teacher supervision: A case-based approach*. Cambridge University Press.

Bolliger et al. (2015), Japanese Students' Perceptions of Digital Game Use for English - Language Learning in Higher Education, *Journal of Educational Computing Research* 0(0), 1–25, DOI: 10.1177/0735633115600806.

Camilleri, M.A. & Camilleri, A. (2017). The Students' Perceptions of Digital Game-Based Learning. In Pivec, M. (Ed.) 11th European Conference on Games Based Learning (October). Proceedings. H JOANNEUM University of Applied Science, Graz, Austria.

Chan S &Lo N. (2022). Teachers' and Students' Perception of Gamification in Online Tertiary Education Classrooms During the Pandemic. SN Comput Sci. *3*(3). doi: 10.1007/s42979-022-01117-w.

Chen, H. H. J., Chen, M. P., Chen, N. S., & Yang, C. (2012). Pre-service teachers' views on using adventure video games for language learning. In *Proceedings of the 6th European Conference on Games Based Learning* (p. 125-130).

Cheng, S. C. (2018). *Teachers' perceptions on the use of digital tools in English teaching and learning.* Retrieved from https://www.diva-portal.org/smash/get/diva2:1489096/FULLTEXT01.pdf

Chik, A., (2012), Foreign Language Learning: Gamers' and Language Teachers' Perspectives, in Reinders, H.(Ed.). (2012), *Digital Games in Language Learning and Teaching*, Palgrave Macmillan, USA.

De Grove, F., Bourgonjon, J., & Van Looy, J. (2012). Digital games in the classroom? A contextual approach to teachers' adoption intention of digital games in formal education. *Computers in Human Behavior, 28*(6), 2023-2033. https://doi.org/10.1016/j.chb.2012.05.021

Dörnyei, Z. (2007). *Research methods in applied linguistics*. Oxford University Press.

Egenfeldt-Nielsen, S. (2006). Overview of research on the educational use of video games.

Digital Kompetanse, 3(1), 184–213. https://doi.org/10.18261/ISSN1891-943X-2006-03-03

Gabarre, S., & Gabarre, C. (2009). Using flash games tostimulatecooperative communication. *AsiaCALL Online Journal, 4*(1), 39-46. Retrieved from https://asiacall.info/acoj/index.php/journal/article/view/3

Hanghøj, T., & Engel Brund, C. (2011). Teachers and serious Games: Teachers roles and positionings in relation to educational games. In S. Egenfeldt-Nielsen, B. H. Sørensen, & B. Meyer (Eds.), *Serious games in education: A global perspective* (p. 125-136). Aarhus Universitetsforlag.

Kidd, T. (2010). *Online education and adult learning: New frontiers for teaching practices*. IGI Global.

Li, Q. (2013). Digital games and learning: a study of preservice teachers' perceptions. *International Journal of Play, 2*(2), 101–116. https://doi.org/10.1080/21594937.2013.817105

Mayer, R. E. (2014). *Computer games for learning: An evidence-based approach*. MIT Press.

Mills, D. J. & Thanyawatpokin, B., (2021), The relationship between extramural digital gameplay and twenty-first-century skills in the language classroom, in Peterson M., Yamazaki K., Thomas M., (Ed.). (2021), *Digital Games and Language Learning: Theory, Development and Implementation*, Bloomsbury Publishing Plc, USA.

Rasti-Behbahani, A. (2021). Why Digital Games Can Be Advantageous in Vocabulary Learning. *Theory and Practice in Language Studies, 11*(2), 111–118. https://doi.org/10.17507/tpls.1102.01

Rasti-Behbahani, A. (2021). Why digital games can be advantageous in vocabulary learning. *Theory and practice in language studies, 11*(2), 111–118. https://doi.org/10.17507/tpls.1102.01

Ruggiero, D. (2013). *Video games in the classroom: The teacher point of view*. Paper Presented at the Games for Learning Workshop of the Foundations of Digital Games Conference, Chania, Greece. Accessed November 11 2013 http://www.fdg2013.org/program/workshops/papers/G4L2013/g4l2013_02.pdf

Salmons, J. (2016). *Doing qualitative research online*. Sage.

Sardone, N., & Devlin-Scherer, R. (2010). Teacher candidate responses to digital games: 21st-century skills development. *Journal of Research on Technology in Education, 42*(4), 409–425. https://doi.org/10.1080/15391523.2010.10782558

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

Schneider, M. (2012). *Exploring the potential of digital game-based learning in the EFL classroom*. GRIN Verlag.

Schrier, K. (2006). Using augmented reality games to teach 21st century skills. *ACM SIGGRAPH 2006 Educators Program,* 15–23. https://doi.org/10.1145/1179295.1179311

Tran, T. T. (2013). Building Classroom Games via Multimedia. *AsiaCALL Online Journal, 7*(1). Retrieved from https://asiacall.info/acoj/index.php/journal/article/view/139

Vogt, S. (2018). *Middle school teachers' use and perceptions of digital game-based learning* (Doctoral dissertation, Walden University, America). Retrieved from https://www.proquest.com/docview/2158393505?pq-origsite=primo.

Xie, J., Wang, M., & Hooshyar, D. (2021). Student, parent, and teacher perceptions towards digital educational games: How they differ and influence each other. Knowledge Management & E-Learning, *13*(2), 142– 160. https://doi.org/10.34105/j.kmel.2021.13.008

Yip, F. W. M., & Kwan, A. C. M. (2006). Online vocabulary games as a tool for teaching and learning English vocabulary. *Educational Media International, 43*(3), 233–249. https://doi.org/10.1080/09523980600641445

York J. and William deHaan J. (2018), A Constructivist Approach to GameBased Language Learning: Student Perceptions in a Beginner Level EFL Context, *International Journal of Game-Based Learning*, Volume 8, Issue 1, January-March 2018.

Yunus, C. A., & Hua, T. K. (2021). Exploring a gamified learning tool in the ESL classroom: The case of Quizizz. *Journal of Education and e-Learning Research, 8*(1), 103-108. https://doi.org/10.20448/journal.509.2021.81.103.108

Biodata

Hang Trinh is working as a lecturer at the Faculty of English, Phenikaa University. She started her teaching career in 2017. After earning her bachelor's degree at Hanoi University, she embarked on her master study majoring in TESOL & FLT at Canberra University in 2019. Her research interests include technology integration, new developments in pedagogy of language teaching and testing and assessment.

Ngoc Nguyen is currently a lecturer of English at Hanoi University of Industry. She obtained an MA degree in TESOL & FLT from Canberra University and has 4-year experience in teaching English as a foreign language. Her research interests include teaching English productive skills, technology in education, collaborative and interactive learning.

Dr. Huong Tran is at present a vice dean and a lecturer of the Faculty of English, Phenikaa University. Graduated from the University of Languages and International Studies (ULIS), Vietnam National University (VNU) in Hanoi, as a teacher of English in 1995, she has devoted her life to teaching English at some universities in Hanoi. She completed her research work for an MA degree in English language at ULIS in 2005 and her research career was continued with a PhD degree in linguistics at the University of Social Sciences and Humanities, VNU, in Hanoi. Her research interests include innovative pedagogy of English language, curriculum development and sociolinguistics of English and Vietnamese languages.