THE IMPLEMENTATION OF DIGITAL GAME-BASED LANGUAGE LEARNING IN A DEVELOPING COUNTRY: A LITERATURE REVIEW

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Abstract

Implementing digital game-based language learning in a developing country faces many challenges due to the teachers' and students' digital competence and technological limitations. Furthermore, most of the research in implementing digital game-based language learning is conducted in developed countries. Therefore, this current research focuses on the studies of the implementation of digital game-based language learning conducted in developing countries to see whether some improvements can be made in this area. The results show that implementing existing games and developing new games are the two major distinctions in applying digital game-based language learning. On one hand, while using existing games is easier and more convenient, most educational games are in the form of quizzes with limited gameplay, and non-educational games are more fun but can cause addiction and are not entirely suitable for learning. On the other hand, the games developed specifically for learning English are great, but they are primarily simple games designed to achieve beginner goals such as vocabulary and reading skills for young learners. Therefore, the need for digital English language learning games designed for more complex objectives for various age groups with good visuals and gameplay is still available, and much future research should be done in this area.

Keywords: DGBLL; Game Development; Developing Country

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INTRODUCTION

There are many factors that affect the implementation of digital tools in language learning in developing countries, including the teacher's and student's digital competence and technical reasons such as unequal access to technology (Tadesse & Muluye, 2020). However, since the pandemic started, teachers in developing countries have been forced to adapt and use technological assistance to conduct the learning process (Adzovie et al., 2020; Clemen et al., 2021). Digital video conferencing programs such as Skype, Zoom, Google Meet, and Microsoft Teams, alongside other online media and tools, are necessary to substitute classroom learning, especially in developing countries where country-wide distance learning was implemented (Kristóf, 2020).

Even though the pandemic may seem to have some positive impact by bringing a massive increase in the implementation of digital technology into the educational world, teachers are faced with quite a challenging feat to provide an engaging learning experience through the limited interaction of what online learning can offer (Tira Erlangga, 2022).

This led to alternative digital media that offered some virtual engagement for the students to interact with. This new way of learning that offers many kinds of activities and features can mainly be categorized as digital learning games that teachers can use to keep students interested in language learning (Wati & Yuniawatika, 2020). These digital learning games implement activities such as quizzes, puzzles, flashcards, and many more. Teachers have also been known to use actual online games as they have some features they can use as learning media (Yudha & Utami, 2022). In the case of language learning, the method known as digital game-based language learning can massively help in learning skills like vocabulary mastery, grammar, speaking, reading, listening, writing, and many more that could otherwise be quite boring, especially in an online learning scenario (Adipat et al., 2021).

With that being said, digital game-based language learning itself was known before the imminent need for such media ever existed. A study shows that the research trends from 2008 until 2018 on second language acquisition through digital game-based language learning focus on developing educational games and implementing commercial games (Osman & Rabu, 2020). This trend indicates how much the learning method was favored even before the pandemic. Despite this, another study also showed that most of these games are only meant for vocabulary learning, and commercial games still have superior visual elements and features compared to the developed ones. (Xu et al., 2020). Furthermore, these studies are more often conducted in developed countries, with both studies mentioning Taiwan and the United States of America as the two countries contributing the most to this research topic.

This study aims to look further into the implementation of digital game-based language learning in a developing country by examining the various research studies that have been done on the topic of digital game-based language learning and other related studies. The combined results of these studies would give detailed insights into the implementation of digital game-based language learning in a developing country and any other factors that might occur. This study is part of a larger research conducted to develop a digital game suitable for language learning. It serves as a preliminary study to identify problems and weaknesses faced by previous researchers and the needs that have not been filled or need to be improved in English language education.

METHODS

This study applied a bibliometric literature review (Paul & Criado, 2020) using statistical citation reference tool *Publish or Perish* to identify the various factors that affect the implementation of digital game-based language learning in a developing country. The researcher chose Indonesia as a developing country since it is the largest country in Southeast Asia that implemented nationwide online learning during the pandemic (Kristóf, 2020). There are no specific periods since the use of digital games in English language learning is very limited. The literature consists of journal articles, conference proceedings, and theses.

The researchers used keywords such as *Digital Game* as the indicators of the topic of Digital Game-Based Language Learning, *English Education* to limit the scope to only English language learning, and *Indonesia* as the research setting. Then, all of the studies were put into two major types of games: commercial and developed (Osman & Rabu, 2020). The researcher then analyzes the advantages and disadvantages of implementing both types of games, along with other factors that might influence the learning experience.

RESULTS & DISCUSSION

Results

Among the initial 200 studies found using the keywords *English education*, *digital games*, and *Indonesia*. Only 70 studies fit into the category. Many were off-topic, such as discussing digital applications instead of digital games, focusing on another language instead of English, and not being conducted in Indonesia. The researcher also avoided including other literature review studies. Finally, after sifting through all the studies by analyzing the title, abstract, and method, the researchers were able to separate the studies that used developed games that are commonly in the form of research and development studies and the other ones that use commercial games which are conducted in various method such as case studies, qualitative or quantitative studies. The results are in the following table.

Table 1.
The result of the selected studies

Year	Total Number of studies	Using Commercial Games	Using Developed Games
2023	14	9	5
2022	16	13	3
2021	13	11	2
2020	16	13	3
2019	7	6	1
2018	4	2	2

Although it is fascinating that there has been a significant jump in the number of studies in the year 2020, further research may need to be conducted to truly investigate the cause and possible correlation with the event of the pandemic. Moreover, it is more interesting that in Indonesia, a developing country, more studies use the already available commercial games than developed games. This is quite contrary to the results from the developed countries where the higher number of studies conducted was the research and development studies that produced a specifically tailored game designed for English language learning (Osman & Rabu, 2020). Further study needs to be conducted to find the factors influencing these results. This current research focuses on analyzing the advantages and disadvantages of applying both types of games instead of what is affecting the research trends on this topic.

It is worth mentioning that one of the similarities between the results of the studies conducted in developing and developed countries is that vocabulary mastery is the most frequent skill used as the goal or objective for the games to accomplish. To further dive into the results, it is also worth mentioning that some examples of commercial games that often came up in these studies are Kahoot and Quizziz. They might have some advantages compared to other games, which will be addressed in the following discussion section.

Discussion

1. Implementing Existing Games

Many available digital games can be used as a media in English language learning. One of the popular ones is called Kahoot. Various research has been found implementing Kahoot to motivate and engage students in learning English. Kahoot has the advantage of being easy to use. It is a free online game-based platform with

unlimited players and real-time gameplay that can be used to monitor student's performance (Susanti, 2017). One study mentions that Kahoot is best used in vocabulary tests with various pictures and videos that students can use while learning (Hadijah et al., 2020). Another study even mentioned that Kahoot can also be used in learning tenses, with many of the students complimented on how Kahoot made the learning process more exciting and engaging (Nurlaela & Nawir, 2020). Kahoot has been proven to increase students' motivation, engagement, and perception (Marsa et al., 2021).

Furthermore, studies have shown that Kahoot can be used with various age groups, from elementary school students (Salam et al., 2022), high school students (Fujiya & Asyidiq, 2022) to college students (Farmana & Wonua, 2021). While the game's competitive nature could increase students' motivation, it could also affect their confidence when they do not get high scores. Other than that, a small percentage of teachers still had negative responses regarding using smartphones in the classroom (Mahbub, 2020). In conclusion, Kahoot is widely available, easy to use, compatible with various age groups, and capable of increasing student's receptive skills and motivation. Nonetheless, it still requires smartphones, and some teachers still disagree. The solution would be to use laptops as the more suitable option since Kahoot is a multi-platform game that can be used on desktop and mobile devices.
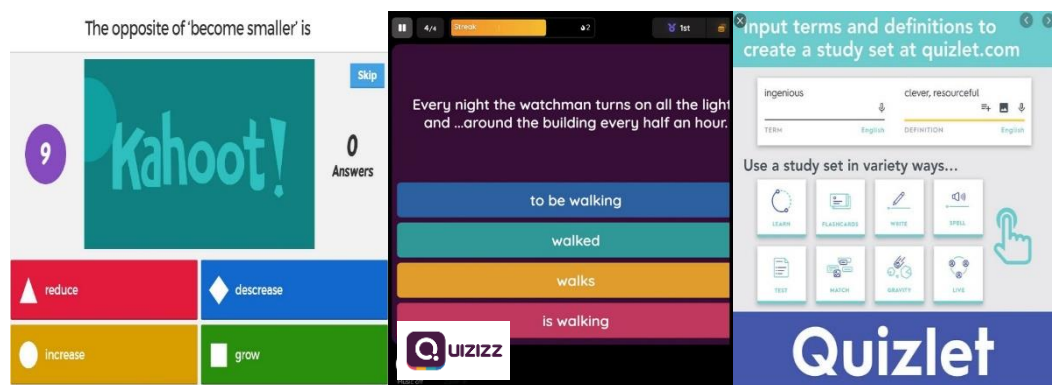
Picture 1.
Quiz-based educational games
Source: Google Images (2024)

The same can be said for other quiz-based online games such as Quizlet, Spellingcity, and Quizizz. It provides similar features and ease of use and can improve students' receptive skills (Fithriani, 2021). Quizizz can also be used as an assessment tool where teachers input formative tests or exams into the platform (Zuhriyah & Pratolo, 2020). In conclusion, Kahoot and Quizizz are free to use and, therefore, widely available to all the teachers and students willing to use them. In contrast, Spelingcity and Quizlet require payments. Since all these games mentioned above require the teachers to input the materials, they can also be used in subjects other than English language learning.
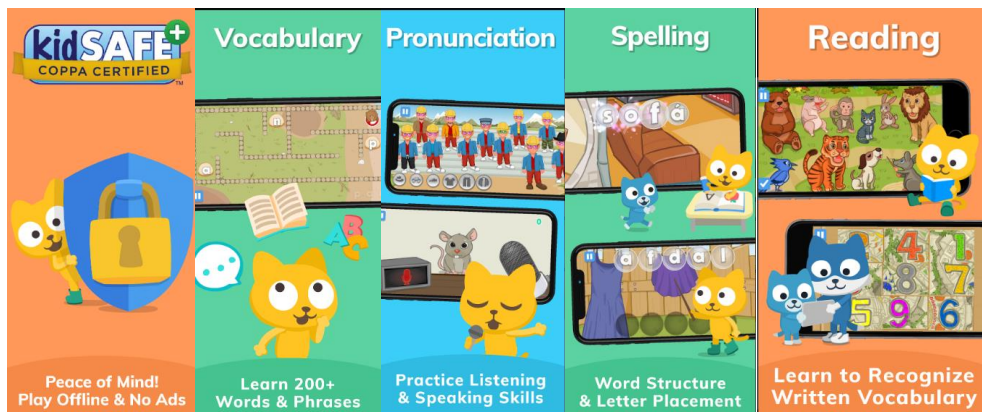
Picture 2.
Studycat's "Fun English"
Source: Google Images (2024)

The same cannot be said with this next one. Studycat's "Fun English". According to Kepirianto (2021), it is a paid mobile app that can be used specifically by young learners to learn vocabulary and practice spelling, pronunciation, reading, and grammar with various topics and lessons. Since this game is designed for young learners, it prioritizes the safety of the children and the kinds of interaction that can be done through the game. So, all of the materials are provided by the developers. The game contains pictures, music, and animations to engage the students in language learning. So, it can be concluded that age-specific games will be less versatile and have specific goals in mind but are very detailed and tailored toward that age group.

All of the previously mentioned games have one thing in common. They were all designed for educational purposes. Despite this, various other research studies also utilize regular non-academic online games. For example, a study explored the experiences of adult learners in using a massively multiplayer online role-playing game (MMORPG) called Mobile Legends and found that the level of enjoyment while playing the game made learning the English language more enjoyable (Putri, 2022). From the game, adult learners could practice their communicative skills through voice chats and reading skills through the stories and descriptions that were present. Other studies used a 4X (explore, expand, exploit, exterminate) game called Clash of Clans (Veronika et al., 2018) and multiple web-based games and concluded that the 4X game can be used to increase vocabulary mastery of elementary school students while various web-based game available on the internet have each their benefit in language learning such as reading, writing, grammar, and vocabularies.

Nevertheless, all of the study above has little to no control over the learning process since the games themselves were not designed to require any 'teacher's assistance, and integrating such a learning process in the classroom is questionable since the majority of the students play the games outside of the school. Furthermore, regular non-educational games tend to be addictive, and without any teachers monitoring their activities, the learning process could be negatively impacted (Mursidin et al., 2022). The students would be focusing on the game itself rather than learning English.

2. Developing New Games

Developing custom games allows the researcher to create a product that fits their research need. It also introduced challenges since most researchers in English language education are not game developers themselves (Dimitriadou et al., 2021). The studies that were found to be conducted either by research and development methods or

experimental research immediately show the limitations of the researcher in developing countries when designing their own game. The games are designed to achieve simple goals such as vocabulary and reading competence (Agung et al., 2021; Rachman et al., 2019; Sofiana, 2018), with the target age groups mostly limited to young learners. Despite that, the visual quality and features are still far behind the already-made games. Compared to Studycat's "Fun English," an existing game that prioritizes the safety of its game, which is also considered its main feature, none of the developed games above could match the level of visual quality and design.

Picture 3.
The examples of the developed games
Source: Google Images (2018-2023)

Aside from that, those studies yielded positive results in increasing the student's English language competencies and motivation level. Despite the promising results, teachers in developing countries still preferred the traditional classroom method (Taufik et al., 2019). Much of the research on implementing digital game-based language learning in a developing country only focused on proving that the method was effective and worked. But, they rarely mentioned the external factors that might affect the continuation of the implementation of digital game-based language learning or whether the teachers use the method in their regular classroom outside of the research environment. (Andreani & Ying, 2019; Mahayanti et al., 2019).

The factors such as teacher performance, student dissatisfaction, and school facilities (Surahman & Sulthoni, 2020; Tjabolo & Herwin, 2020) made it so that any alternative treatment would pose a breath of fresh air in the classroom environment. Another possible contributing factor is that these developed games were applied in a controlled research environment. Furthermore, in actual classroom activities, choosing what method and media to use in language learning relies heavily on the teacher's decision (Rido, 2020). In addition, the existing technological limitation in the developing country is an added obstacle for teachers to implement digital media into their classroom learning activities (Fuad et al., 2020). There is no information regarding the use of these developed games outside of the research environment or after the experiments were finished since it is beyond the scope of the research that they were conducted. Not only that, only one of these developed games is available or at least easily accessible through platforms such as Google Play store or another digital store.

CONCLUSION

This research has showed how digital game-based language learning has been implemented in Indonesia. The limited number of the research found in digital game-based language learning in Indonesia compared to other countries indicates how much there is to improve in this area of research. Despite the majority of the research show positive results in implementing digital game-based language learning for English language education, some of them mention the challenges that hinders the implementation of this learning method such as the students' and teachers' technological competence and the limitation of the technological infrastucture. Further studies is required to give more insight toward these obstacle since this current research only mention what the previous researchers mentioned in their studies. Nevertheless, by analyzing multiple research in the implementation of digital game-based language learning, this current research gives insight into the learning experience, the advantages and the disadvantages of each different game that was used so that future researchers that are interested in this are able to gain knowledge to improve this area of research further.

With that being said, there are many factors that affect the implementation of digital game-based language learning in Indonesia. First, the number of studies conducted in this area is still limited, especially in developing new games. Second, the implementation of existing games into English language learning by using educational games is promising. However, still in the form of quizzes, and while non-educational games are more enjoyable, the negative side of gaming addiction could affect the students. Third, the developed English language learning games in Indonesia are limited to achieving simple goals such as vocabulary and reading for young learners and are still far behind the already-made games in terms of design and features. Lastly, the teacher's decision and technological limitations are huge factors in implementing digital game-based language learning. So, there is a huge room for improvement in creating digital games that will be able to achieve the more complex goals in English skills and competencies for a wider range of age groups with a set of features and visual designs that are comparable to and as widely available as the other already-made games.

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