Gamification in Teaching and Learning Languages: A Systematic Literature Review

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Abstract: It can be seen that emerging technology has positively affected learning in several aspects. Recently gamification has been implemented noticeably in online learning and teaching. Gamification has shown its effectiveness in students' integration of the education process by increasing students' integration with the teaching material and increasing their competence. Learning and teaching a new language is a complicated and strenuous process, so learners usually need to be motivated. Gamification can play a role in further encouraging learners. This study conducted the systematic literature review methodology to demonstrate gamification in teaching and learning new languages over the three databases Web of Science, Science Direct, and Scopus. The study includes 103 studies that have been published between 2010-2020. The study finding reveals that gamification can be a useful tool for teaching and learning languages and can increase learners' motivation and turn learning into an enjoyable process. It is recommended that further research be conducted in language education, focusing on gamification in learning the four primary language skills.

Keywords: *Gamification, language learning, language teaching, educational application, mobile applications.*

Introduction

Learning a second language is not a comfortable, pleasant task, and students usually experience difficulties. It needs to master writing, reading, speaking, and listening skills. According to Hayakawa et al. (2019), the most challenging complex terms are usually easier to forget when learning a new language. So, to learn a second language more efficiently, it is essential to connect the words to the real world. Besides, teaching a new language involve some cognitive activities and challenging tasks (Hong, 2016). For instance, collaboration is a crucial term for teaching language (Farahani et al., 2019) to create a relaxing atmosphere inside the class (Graziano, 2019) since many students have a fair factor. Some tasks in language classes, like translating, are time-consuming in crowded classes and are problematic for the teacher (Kamaruddin et al., 2019). Teachers need to use creative teaching methods to engage resistant students more in the teaching lessons. It is essential to learn a new language if individuals want to be a part of that culture (Jetzkowitz, 2018). Also, it has been proven that learning a new language enhances human multitasking skills since the language human speaks shapes the way they think.

Through the use of game-based elements, teaching and learning turn into a more collaborative and enjoyable process. The purpose of implementing the gamification concept in education is to maximize learner's motivation and engagement. The main focus of gamification should be on the learner to make a desirable change in behavior. Gatautis et al. (2016) claim that gamification is mainly employed to direct users' behavior. However, on the other hand, Calderón et al. (2018) argue that implementing gamification is not only about encouraging users through the use of game elements. It is instead an application lesson using in the nongame position, such as training and education. Also, Yildirim (2017) shows that gamification positively impacts achievement and behaviors against learning objectives.

Gamification is not a game application. According to Shahri et al. (2019), it uses game-based application components and game principles in a nongame context to engage users more and increase retention with the system implemented. Gatautis et al. (2016) claim that it naturally concerns users' behaviors since it focuses on end-users. Mostly it is used to increase motivation and engagement. It can also be referred to as a group of processes and activities implemented to resolve a problem using an element of the game in a business context. The term gamification goes back first to 2008, but then up to 2010, it has been used more widely (Huotari & Hamari, 2016). Gamification applications have been used and implemented wieldy in

almost every sector of our life (Jun et al., 2020) since people from different age groups enjoy playing games. Recently, the gamification market and its application have been growing massively, and it might be continued to grow (Gatautis et al., 2016). It has received equal attention from both education and practitioners in the industry. Teaching and learning also have their share of the implementation of this technology. For instance, gamification has been implemented in online learning and training. Hursen and Bas (2019) indicate that 'gamification in education increased learners' motivation, participation, and loyalty. Naghavi Alhosseini and Pourabbasi (2018) investigate the impact of gamification on professional commitment. They have found it might be useful to create professional commitment.

Another study result showed an increment of engagement and brand raising and supporting employees' management (Robson et al., 2016; Yang et al., 2017). The gamification application can be used to capture a positive change in human behavior (Garett & Young, 2018). According to Swacha (2019), the gamification concept has been implemented in the tourism field as well in order to enhance tourist experiences and improving loyalty. It can also be used for social and environmental purposes. These are only some examples of implementing—Gamification of many other examples that have taken advantage of this promising technology.

Some people argue that it is hard to stand in such a competitive market with many online and mobile applications. It is more especially true with generation Z, whose use of mobile phones is excessive and tends to get bored effortlessly (Khomych, 2019). They are known for mobile applications, but they can find in many aspects of our daily lives. Gamification is significant since it employs game elements to empower productivity and increase engagement and motivation (Calderón et al., 2018). The game, gamification, and game-based learning (GBL) are three famous terms related to each other, and people use them interchangeably because of their proximity to each other, and people cannot differentiate between them. However, these three terms are slightly different in use, function, and purpose. Shahri et al. (2019) argue that games have been for a long time a part of our culture and play as a medium for entertainment, learning, teaching, and relationship building. Recently, games have been digitized, leading to an increment in the amount of use and implementation in our daily lives. They also indicate that the fulfillment of games in retaining end-user engagement and influence has led researchers to investigate the phenomena in more intensity to perceive constructs in video games that permit such engagement and sustainability in customers (Shahri et al., 2019).

On the other hand, game-based learning is a training that uses game elements to train a particular talent to achieve a particular outcome of learning (All et al., 2016). It converts the principal content material and objectives in a fun way. So, the differentiation between gamification and game-based learning combines a mechanic of the game with training content. However, gamification makes use of game factors as praise or reward for finishing specific training modules. In their study outcome, Hamari et al. (2016) suggest that the game challenge must be capable of keeping with learners' increasing performance. Also, there is another term that is occasionally being used by practitioners, which is Serious Games. According to Riopel et al. (2020), it is an application whose primary function is learning instead of interlacement.

Gamification has massive attention from academia to study its phenomena, such as designers, developers, psychologists, and human-computer interaction experts. Gamified design elements have a significant role in driving customers' expectations to meet their requirements (Jun et al., 2020). Generally, a gamification application needs to be fun and entertaining; also, there should be a sort of competition and challenge. There is a wide range of gamification elements such as storytelling, competition, feedback, points, level, leaderboards, time-based, avatars, each of them used by gamification to be implemented in a different form (Dicheva et al., 2015). Gamification elements, which are sometimes called game mechanics, " positively impact user behaviors. The gamified systems must have a rewarding element for core activities to increase motivation (Featherstone & Habgood, 2019; Mese & Dursun, 2019). In their study, Lier and Breuer (2019) claim that it is advanceable to include the competitive game components that suit their situation inside workplace health promotion programs since they accelerate physical activities. According to Dakić (2019), gamified applications must have some procedures and characteristics like goals that wanted to be achieved. Also, it should be known who are the targeted group of audience and their needs. Also, the gamified game's value as the main goal is to convince the audience that they need it. It is agreed that usable and straightforward applications are always better for learnability than complex ones, confusing users (Nielsen, 2012).

Today, technology plays a significant role in enhancing learning teaching in the industrial, educational revolution. There is currently a buzzword among academia about education 4.0 on the education industry's development (Hussin, 2018). Analysis research on Horizon Report entitled new technology trends in education conducted by Martin et al. (2018) shows that educational technologies will impact the higher education field due to

social interest evolution. Hussin (2018) explains that the Z generation (18-23 years old) will have different learning needs, leading to different learning outcomes and performance.

Teaching or learning for the acquisition of a new or second language is not a pleasant process. It is quite a long process for some learners, even for first language acquisition in the kids' case. Arnon (2019) argues that learning the first language improves during childhood, contrasting with age invariance predictions. It is significant to take advantage of new technology to create a more motivational environment for learners. Alomair and Hammami (2019) state that one of the straight advantages of inexperienced persons within the twenty-first century is the potential to learn second languages since mastering the second language became a more technology-centered design. They continue to say that the gamification concept can be used adaptably to learn a second language in the present-day. The gamification concept has been applied recently for teaching language in traditional and vocational training. Moreno (2019) investigates which game mechanic or which game element will impact teaching a foreign language using the mobile gamified application. He discovered that although designing a gamified mobile application takes more effort and time-consuming, the study shows a correlation between the learners' perception and design usefulness. Besides, Huang et al. (2019) state that mobile language learning has a significant impact on assisting the learner in learning a language. Hustarna and Melati (2019) claim that teaching materials should be developed under instructional rules to allow learners to study efficiently and drive teachers to teach effectively to attain all competencies predicted based totally on what has been said within the curriculum.

A significant number of academic searches have been conducted on gamification and its impact. Most of them show positive results on users. Empirical research has been done by Shahri et al. (2019) on how to engineer gamification; the findings suggest that it is vital to align gamification's characteristics with the implemented environment. In their research, Garett and Young (2018) provided a group of popular elements of gamification to assist the gamification development in healthcare. Swacha (2019) proposes a new approach to identifying an architecture for addressing the needs depending on determining gamification application components.

Furthermore, the empirical research outcome done by Bouchrika et al. (2019) confirms that there is a positive impact on learners who have used online platforms, which include gamification elements mostly on engagement and motivation. Although many studies have been done on gamification's subject related to the teaching and learning languages, there is

no comprehensive overview of using gamification to teach and learn new languages. Gamification can be implemented to increase the engagement of the learner. Thus, the motivations of conducting this research are to provide an overview and investigate the implementation of the gamification concept in language education. The overall purpose and aim of this study are to provide an overview of the previous studies related to utilizing and implementing gamification in language education. Also, this study identifies the existing trends and initiatives utilizing gamification in their environments. A Systematic literature method will help obtain an overall view of the subject and form the research questions. This systematic literature review research conducted to address possible answers to the research questions, which are reflecting the purpose of the study:

- RQ1: Which game-based elements have been used for language learning?
- RQ2: In which education level gamification has been mostly implemented in language learning?
- RQ3: Which technology has been using for the concept of gamification in language learning?
- RQ4: Which approaches have been implemented to increase learner engagement and motivation in language learning?
- RQ5: What are the opinions, perceptions, and attitudes of gamification learners in language learning studies?

2. Related Research

There are a considerable number of useful studies on the gamified application for learning and teaching languages. Sriharee (2020) proposes design patterns in both software and educational perspectives to design a game-based approach to design patterns in both software and educational perspectives to design a game-based approach to learn the Thai language. This proposed pattern can be used to develop game applications for learning other languages. Yukselturk et al. (2018) used Kinect technology to investigate game-based learning tools on self-efficiency for learning English as a second language. The results show an enhancement in the self-efficiency attitude for the experimental group than the control group. The computer can be integrated into language learning in a formal and informal pattern. In his study, Crăciun (2019) identifies that integrating technology in language classes can transform learning based on English language teachers' perceptions. Kurniawan et al. (2019) have developed a gamified mobile application called Shadowingu for teaching the Japanese language. The

developed gamification application was preferred by students and impact positively on their motivation because it has a direct feedback element whether they give is correct or not. Purgina (2019) proposes an educational gamified mobile application called WordBricks to teach and lead English natural language grammar and supplementary material for learning the Irish language. This gamification application's primary function is to help students build sentences based on predefined grammar rules. Another gamified mobile application developed by Triando and Arhippainen (2019) was created to assist novice learners Vienna Karelian dialect in an effective and fun way. This mobile application is based on the learning model of language with easy, medium, and challenging levels for the four sections of language skills: writing, reading, and listening.

As it is known, gamification is the use of game elements in not game context. Many gamification elements are being used for game mechanics, which increase student motivation in learning new languages. Cho and Castañeda (2019) list a group of gamification elements that have been built according to learners' activities as fellow competition, levels, tasks, challenges, social interaction, rules, time progress, and rewards. Pardoel et al. (2019) categories the elements into two main groups, Abstract Elements (cooperation and challenge) and Concrete Elements (leaderboard and badges), since the use of elements depend on the learning objects. However, according to Maican et al. (2016), the most functional gamification elements are leaderboards, points, and achievements.

3. Methodology of Literature Review

This research is conducting a systematic literature review to investigate the utilization of gamification in language education to analyze what ways the concept has been employed in language teaching and language learning. This systematic review has been followed by the reviews, which count as a significant phase. This systematic literature review follows the research approach proposed by Cinquin et al. (2019), which consists of consecutive phases. Firstly, the publications have been determined systematically. After that, publications have been gathered according to the inclusion and exclusion criteria that have been set before. Then, the articles in which related to gamification utilization in language education have been analyzed.

3.1. Search process

The search process has mainly been done on Web of Science, ScienceDirect and Scopus, databases. Also, a peer review process has been

done on the searcher studies to eliminate any bias. Table 1 illustrates searching keywords and their corresponding synonyms. These keywords were chosen for their significance to the research topic and relativeness to the research topics.

Table 1. Keywords of the search process

Source: Authors' own conception

Keywords	Synonyms
Gamification	"gamification elements" or "gamified" or "game element*."
Language	"learning a language" or "teaching language" or "language application" or "foreign language."

2.1.   **Study Inclusion and Exclusion criteria**

The inclusion and exclusion criteria have been set to ensure that the searched articles are related to the study's domain and meet its objectives, as shown in Table 2.

Table 2. Inclusion and Exclusion criteria

Source: Authors' own conception

Inclusion criteria	Exclusion criteria
Only the Research article was written in the English language.	The research article is not written in the English language.
Articles with the research doing.	Articles off the topic
Researches published between 2010-2020.	Any researches which not lay between 2010-2020.
Full text is available online.	Full text is not available online.
Available within the three databases Web of Science, Science Direct, and Scopus.	Any duplicated research articles.

As is shown in figure 1, the article selection process was started with (103) articles. In the search first results, 36 articles were obtained from the Web of Science database, 47 hits in the Scopus database, and 20 hits in the Science Direct database. Then the screening process started with eliminating 14 duplicated articles as they were duplicated among the three databases. After that, the abstracts have been screened to apply the inclusion criteria. Five articles have been eliminated since it was not able to access the full article. Besides, 56 articles have been excluded since it was not related directly to this study's topic. Then the process of full-text reading started over the 27 articles for further analysis.
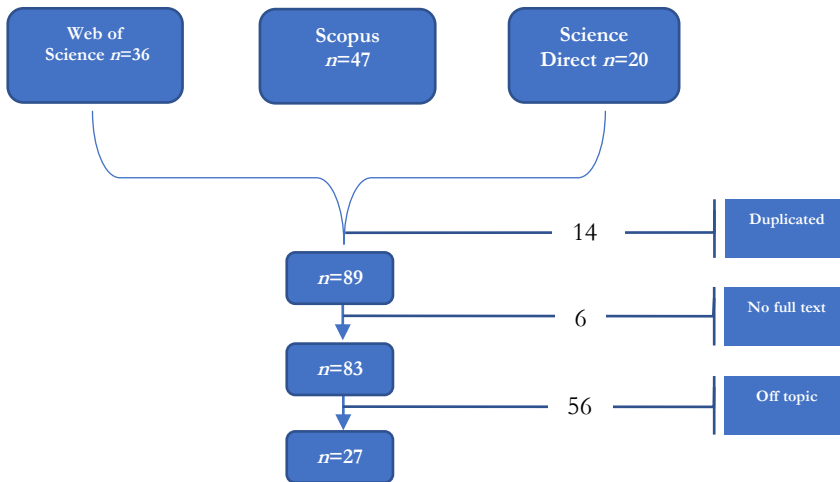
Figure 1. Article's selection procedures flowchart

Source: Authors' own conception

3.2. Data Analysis

After the compatible articles have been selected systematically, they have undergone full article reading. After that, the data analysis stage is performed to extract data structured in a form that can be categorized and classified according to a theme related entirely to the research questions. The study themes included: gamification elements, education level, technology use, approaches and perceptions, and gamification users' attitudes.

4. Results

This study aimed to identify language learning and to teach with gamification apps. Results obtained to achieve this aim were answered under the following titles.

4.1. Game-Based elements used

It can be seen that gamification has a useful role in education. It may raise the question of how gamification can impact learning and teaching a second language. Firstly, it has been noticed that game elements were implemented to increase the learner's motivation in second language acquisition. It has been observed that gamification elements for language education were categorized into two groups, self-element (levels, badges, points, or time limit) and social-elements (leaderboards and competition) (Lee & Lim, 2015). However, it can be said that level and time limit elements have been used noticeably and most importantly. These findings were also emphasized by Osipov, Volinsky and Grishin (2015) and Ramos-Ramirez & Mauricio (2019). It was identified that such elements could effectively turn the teaching and learning of a foreign language into an enjoyable process (Abrams & Walsh, 2014; Akgün & Topal, 2018; Purgina et al., 2019).

4.2. Implementation of Gamification in education level

The study discovered that gamification has been not used to teach languages to children but rather for different ages and educational levels. For instance, a gamification method has been proposed by Udjaja (2018) to assist international students in learning the Japanese language by stimulating the nervous and sensory system to motivate them to study more. Also, although gamification has been implemented in other age groups throughout high school (Wang et al., 2019) and secondary school (Hashim et al., 2019) however, gamification has most wildly been used for university students (Bassani et al., 2018; Mei & Yang, 2019; Tan, 2018).

4.3. Technologies used for language education

There should be specific techniques to assist in the learners' implementation process to acquire a new language, either using mobile and desktop web base gamified tools for implementing gamification. There is an exciting tool to be employed, such as Holographic technology (Cerezo et al., 2019), new technology. However, it was observed during the process of research analysis that most well-known language applications that are already

available have been utilized. For instance, Rachels and Rockinson-Szapkiw (2017) explain that Duolingo is an appropriate gamification application for teaching Spanish grammar and vocabulary. Busuu is another type of language learning platform; this application has also been implemented by Kétyi (2016), and it has been shown that it is useful in learning English, German, Italian and Spanish languages. It has been observed that a tool like Kahoot can be useful in teaching and learning languages. Two studies have concluded these findings: Tan Ai Lin et al. (2018) and Zou (2020).

4.4. Engagement and motivations approach

Although gamification is new as a pedagogical strategy, it can be emergent in language learning (Flores, 2015). There are some theoretical approaches and some technical strategies behind the acquisition of the second language. Some novel approaches of hybrid learning model though combining personal and gamification characteristics for learning language based on the Felder-Silverman model of learning style have been spotted as the approach proposed by Kang and Kusuma in (2020). It has been noticed that teachers' perceptions and attitudes can also be impacted by the use and implementation of gamification elements in teaching language (Asiri, 2019). The study demonstrated that different approaches had been taken in place for implementation. For example, learner autonomy is required and can enhance learning a second language, and gamification can ensure such an environment (Cruaud, 2018). However, it has been noted that communication and collaborative approaches are used mostly as a game learning strategy to increase learning by using cooperative game tools for learning English. This finding aligns with the results of the two studies conducted by Osipov, Nikulchev, Volinsky and Prasikova (2015) and Reitz et al. (2016).

4.5. Learners' opinions, perceptions, and attitudes

It has been observed that the primary goal of using the gamification concept in the language education process is to increase the motivation, engagement, and integration of students with the learning materials, instructions, and exercises, which is considered for some learners as a non-enjoyable task, especially for children. This finding is in line with the results that have been proposed by (Cruaud, 2016; Fogarty, 2019; Tamtama et al., 2020). Students were enthusiastic and felt engaged and mentally stimulated due to the activities and the willingness to participate. The participating students (74.1%) say that they felt very engaged and motivated to learn English in a questionnaire done by Sevilla-Pavón & Haba-Osca (2017) when

asked about their attitude about using gamification in language learning. These research findings are significant in language education contexts since the previous studies concentrate significantly on implementing gamification in the acquisition of a new language.

5. Discussion and Conclusion

Many tools and platforms have successfully implemented teaching and learning a new language to improve and enhance the learning process by increasing learners' motivation and engagement. Gamification is considered a useful and practical language education tool as learning a new language is not straightforward. This study has been conducted to provide an overview of utilizing and implementing gamification in language education. The research results show that gamification is an essential tool for language education, which can be considered an extra incentive in the teaching process. It has been found that gamification can increase students' enthusiasm and increase their motivation. Therefore, it turns the learning and teaching of a new language into an enjoyable process. A limited number of publications were included in the search process due to the study time frame, which is the main limitation of this study. So, it is recommended that in the future more publications be included from more databases. Additionally, it is essential to recommend that in the future, there should be a focus on how gamification can assist the education of new language for the four primary language skills. And on how gamification can assist the education of new languages for learners with special needs

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