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Gamification in English as Second Language Learning in Secondary Education Aged Between 11-18:
A Systematic Review Between 2013-2020

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ABSTRACT

Since gamification has strengthened its place in education over the years, it is frequently preferred in English as a Second Language learning. This study aims to investigate the literature on the effects of gamification on students' English learning as a second language and the tendency of students to use games to learn English as a second language. This review contains a systematic review of published articles about gamification in English as a Second Language learning for learners aged between 11-18 from 2013 to 2020. The study was designed according to the specifications of the PRISMA 2009 checklist. A combination of words related to gamification, game-based learning, English as a Second Language, and secondary school was included as a search strategy. After selection, 10 research articles written in English were reviewed. Their results indicated that the games enhance the fun, raise students' motivation, and boost their participation while helping their autonomous learning. This review includes suggestions to support planning game-based English lessons.

KEYWORDS

English as Second Language, Game-Based Learning, Gamification, Second Language Learning, Secondary School, Systematic Review

INTRODUCTION

Gamification is getting popular in second language learning. Gamification is an approach for empowering users' motivations while engaging and helping them enjoy themselves in computer-mediated and non-gaming environments (Seaborn & Fels, 2015). The concept of gamification comprises game elements (badges, points, awards, etc.), systematic and artistic game designs, and non-game context. The target objectives of it are not focused on just having enjoyment or fun. Both of them are included in the learning process while students are experiencing games (Flores, 2015). According to Tivaraju et al. (2018), using educational technology in English language classrooms

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(via a game-based online learning platform called Kahoot!) fostered positive attitudes, increased student motivation. It allowed better perceptions and expectations of learners toward English learning for the future. Also, Morthy and Abdul Aziz (2020) suggest that language games enable students to learn the target language in a non-threatening learning environment successfully. Additionally, gamification may promote students' learning practice, also using games in classes is advantageous for students (Barab et al., 2009). It can be utilized at about all language levels and ages. Students may improve their 21st-century skills, including literacy, speaking, listening, critical thinking, digital literacy, and problem-solving skills. Learner autonomy increases since students can correct themselves with low stress. They progress by learning at their own pace (Maloney, 2019). According to Aydın (2014), students participate more effectively by creating a basis for meaningful inputs thanks to this meaningful communication in foreign language education created by digital games. Since there are review studies examining English learning with games on elementary and higher education levels, there was no review study on secondary school level whose students are aged between 11 and 18 in several countries. The International Standard Classification of Education classifies secondary education as ISCED 2 (lower secondary school) for 12–15-year-old-students and ISCED 3 (upper secondary school) for 15–18-year-old-students (ISCED, 2011). This time span is critical to reinforce and elaborate English learning. For this review study, the studies of those participants who were 11-18-years old were chosen as secondary school age ranges so as not to lose data because of the age. Secondary schools prepare students for higher education, and it is necessary to learn English for their research. There was no meta-analysis about gamification in English as a Second Language Learning (ESLL) for secondary school students aged between 11 and 18.

The main aim of this review is to systematically review the studies on observational proofs detailed on the esteem of games in language learning, including its pros and cons. With this aim, the studies focusing on the effects of gamification on 11-18-year-old students and their learning and their tendency to use games to learn English as a second language (ESL) were reviewed. Therefore, the research questions are:

1. What is the literature tendency of 11-18-year-old students' game usage to learn English as a second language?
2. How does gamification affect 11-18-year-old students' learning English as a second language?

METHOD

This study is designed as a systematic review to help teachers see gamification effects in classrooms. According to Gozcu and Caganaga (2016), pedagogically, games have an extraordinary value for Second Language Teachers with numerous advantages. A systematic review study investigates a question commonly emanated from a practice or policy problem (Denyer & Tranfield, 2009). As a systematic review study, it examines and tries to reach a clear understanding of the effects of gamification on secondary level students' learning of English as a second language.

Protocol and Registration

When the literature was searched, Dehghanzadeh et al. (2019) published a systematic review on utilizing gamification to bolster learning ESL recently. Their review was used as a template to develop the protocol and table for the review. The review protocol was generated with the specifications of the PRISMA checklist (Moher et al., 2009). The review states that by the development of technology, learners from different countries needed to learn ESLL, and this situation required advanced learning methods, including real-life situations. Gamification in education engages students while creating a fun, enjoyable, and triggering learning environment. But the current review research differs from Dehghanzadeh et al.'s (2019) study in terms of students' ages, date range, and gamification elements.

Eligibility Criteria

In the database search, as inclusion criteria, papers published in a scientific journal clearly described at least one gamification element and its results in ESLL classes with 11-18-year-old students. As exclusion criteria, thesis, books, conference papers, preprints, frameworks, student essays, meta-analysis, reviews, and articles about different majors, languages, primary school, and higher education levels are listed. Another exclusion criterion is not including the papers focusing on educational technologies and/or technological tools and teaching culture except gamification.

Information Sources

In this review, electronic databases were searched between 31st March and 27th April 2021. EBSCOhost, ERIC, Dergipark, and Google Scholar were searched in terms of education. These electronic databases were chosen as they are frequently used by educators (Alliant International University, 2017). McCormick (2013) stated that gamification turned into a buzzword with practitioners from many fields hastening to adopt the concept. In the same year, more gamification research was conducted after Gamification 2013, held at the University of Waterloo Stratford Campus (Growth Engineering, 2019). Journals published in 2020 are researchable since 2021 is the year that has not finished yet. Therefore, the results were filtered by choosing years between 2013-2020.

Search Terms

Gamification is a notion outside of serious games, as it applies full-fledged gameplay without game elements to a non-game environment. Game-based learning also applies to full-fledged games (Fatta et al., 2018). Therefore, search terms include gamification, ESLL, gamification in education, game-based learning, gamification in ESLL, and secondary school. Game-based learning and gamification were chosen as keywords since researchers were using them in their articles. It aims to draw the big picture of gamification in English as a second language learning in secondary education aged between 11 and 18. Additionally, the meanings of these words were close to each other and could be used interchangeably.

Study Selection

The papers had been identified by the search terms from the databases. All terms and phrases are searched in all databases one by one with different search combinations. First of all, "gamification" and "ESLL" then "gamification in education or game-based learning", at last, "gamification in ESLL secondary school" terms were searched respectively. A single researcher performed the search, which resulted in 624 studies by title. The papers were filtered between 2013-2020, research types, school grades, topics, and majors. In the end, ten studies met the criteria.

EBSCO and Dergipark were determined as the data sources in the first place. However, there were no results that are related to "Gamification and ESLL", "Gamification in education", "Game-based learning", and "Gamification in ESLL secondary schools". Formerly, "Gamification and ESLL" were searched together in ERIC. One study was found in each result, and the other studies were eliminated due to their school grades (primary school and higher education). "Gamification in education" or "game-based learning" were searched by using the ERIC database. 71 studies were found. 26 of them were about education in ESLL, but two were about preschool, 6 were about primary education, and 18 were for higher education. In Google Scholar search, "Gamification in education" or "game-based learning" terms were searched, and there was a huge amount of studies. Therefore, the searched term was specified as "Gamification in ESLL secondary schools". From 483 results, 255 of them were academic dissertations, 2 of them were meta-analyses, 1 of them was preprint, 1 of them was about a scale, 2 of them were books. After publication elimination, it was eliminated again due to school grades, 8 of them were about primary school, and 33 of them were about teaching at higher education level. 49 studies were about technology, applications, or tools, but they were not focused

on gamification in education or language classes. 27 of them were about teaching culture, which is out of gamification. In total, ten studies met the criteria. See details in Table 1.

Data Collection Process

Data were comprised of 10 studies. "Zotero" and "Publish or Perish 7" programs were used to manage the data as CVS.

Table 1. Keywords, scanning steps, elimination, and its reasons

Keyword	First scanning	After elimination	Elimination reason
Gamification+ESLL (ERIC)	1	0	Higher education
Gamification+ESLL (EBSCO - Academic Search Ultimate)	1	0	About Primary School (7-10 years old)
Gamification in education or game-based learning (ERIC)	71	0	Science/STEM:9 Management:1 Preschool:2 Higher Education:18 Primary Education:6 Writing/Turkish:1 P.E./Health:2 General Education/Instructional usage:16 Politics:1 Maths:1 Social Studies:4 Business/Marketing:3 Computer Sciences:2 German:2 Russian:1 French:1 Music:1 Special Education:1
Gamification in ESLL secondary school (Google Scholar) 2013-2020	483	10	Maths/Geometry:6 Science:4 Business:2 Economy:1 Thesis:255 Student Essay:2 Book:2 Preprint:1 Conference:16 Higher Education:33 Primary School:8 Review:23 Meta-analysis:2 (higher education) Framework:18 Medical/Health:1 Psychology:1 Literature/Essays:17 Tech/Tools (Not focused on gamification in education):49 Teaching culture out of gamification:27 Malay:1 Urdu:1 Chinese:1 Scale:1 Military:1

Data Items

Data items were paid attention to that included up-to-date, solution-oriented, everyday learning experiences. Therefore, they were sought due to variables related to the year of publication, aims, authors, publication sources, research questions, learning environment, methodology, data collection method, duration, data analysis method, sampling, gamification elements, learning experiences, learning outcomes, results, and recommendations.

Risk of Bias in Individual Studies, Across Studies, and Within Studies

The methods and results of the studies were examined. While examining the studies, it was seen that the methods and results were carried out to prevent bias, considering the risk of bias. The studies were carried out in randomly selected schools and classes, and the results were measured with pre-tests and post-tests. There was no bias in the articles since they had clear findings and results.

Ten studies for review were examined with the analysis table by one researcher. The researcher paid attention to the appropriateness of methods, designs, relevancy to the age range 11-18 in the light of research questions. The second researcher overviewed the results and confirmed the analysis of the first researcher. There was no bias across studies since they were from different countries and classes, including results.

Synthesis of Results

In this review, there was no meta-analysis. No effect size calculations were encountered in the studies.

RESULTS

Study Designs

In the ten studies, different research designs were represented. Some of them used quasi-experimental study designs (n=2), and one included qualitative research design (n=1). Some of them used quantitative (n=2), while others chose experimental studies (n=2), one of them was a descriptive case study (n=1), while one of them used action research. Another one used a pre-experimental design (n=1). In general, 10 studies are designed as quantitative research methodologies, 1 of them also included qualitative design. 8 of the studies are experimental, and 2 of them are quantitative study designs.

Sampling in the Studies

Sampling in the studies was differentiated. Quasi-experimental studies included 30 and 70 participants. A combination of quasi-experimental and qualitative research included 22 and 30 students, and as a control group, 20 students had joined. One of the quantitative studies included 30 participants like another experimental study, and another quantitative study included 63 participants. The descriptive case study (n=13), the pre-experimental study (n=16), the experimental study (n=174), and the action research (n=40) were implemented.

Summary Measures, Data Collection, and Analysis

The studies used questionnaires, pre-tests, post-tests, t-tests, ANCOVA, and frequency count as measures of the individual studies examined for this research. Data collection methods mainly included pre-tests and post-tests, especially for experimental and quasi-experimental studies. One of the studies had a face-to-face interview, while 2 of them included questionnaires additionally. 4 of them only used questionnaires to collect data. Five of the studies used pre-tests and post-tests.

Results of Individual Studies

In the reviewed studies, the results of pre-tests and post-tests are shared. In one of the studies, most participants had better grades and improved themselves in grammar learning. In another study, the

participants' vocabulary levels increased after playing paper-based or computer games. Gamification failed to improve students' skills when it comes to argumentative writing, although it motivated students. Gamification helped students learn grammar as a whole, and its advantages in classes were identified, including language aspects. In one of the studies, it has appeared that gamification has positive effects on students' extrinsic and intrinsic motivation in learning English as a second language. According to the same study, students' autonomy, ability to socialize (relatedness), and competence skills improved thanks to gamification. Another tool in a study revealed that gamification helped students in understanding English texts. Gamification creates a positive environment, including chances to experience and establish language skills. Meaningful learning had been experienced effectively. Gamification raises motivation, initiates healthy competition dynamics, including rapid feedback in a fun, student-centered environment.

Quasi-experimental and experimental studies' durations were changing between 3 weeks and 14 weeks. Questionnaires were applied in the other studies. However, different research questions were asked in the reviewed studies. Lam et al. (2017) included the research questions, including if a blended learning approach improves student argumentative writing compared to a teacher-led direct-instruction approach and a blended learning + gamification approach. Other questions were if the blended learning + gamification approach improves student argumentative writing compared to a control condition and if the application increases online student contribution and students' and teachers' perception about the blended learning approach. Azar and Tan's (2020) research questions included the University Interns' preferences and perceptions of ICT Techs (MALL, Gamification, and VR) application in teaching the English Language for secondary school students during the Covid-19 Pandemic in Malaysia. Rajendran et al. (2019) included the questions in their research like identifying Quizvaganza game-based learning increases the level of motivation among learners to engage in learning the English language; identifying the perceptions of learners towards English language classroom with Quizvaganza game-based learning platform. The research questions of reviewed studies mainly focused on characteristics and learning experiences of gamification in ESLL. See details in the Appendix.

Applied Games

In studies, Kahoot!, Quizizz, Edmodo, SMARTies, online language games, Jclic, Surala, computer-based games, and ICT Techs including MALL, VR, and gamification were applied. According to Anisa et al. (2020), Kahoot! positively affects students' motivation. It stimulates intrinsic and extrinsic motivation; they have the experience of autonomy, ability to socialize (relatedness), and competence so that learning becomes more enjoyable for students. Quizizz creates a healthy competition in classes. Also, it gives students chances to explore while motivating them (Rajendran et al., 2019). Additionally, Edmodo offers students a sense of achievement and instant feedback, which helps them focus and interact easily (Lam et al., 2017). A non-threatening learning tool SMARTies triggers meaningful learning while rewarding students academically in a fun and enjoyable environment (Lee, 2016). Online language games, including Kahoot!, Socrative, and PowerPoint challenge games, encourage students, enhance confidence, improve their self-esteem and motivate them (Hashim et al., 2019). According to Rafiq et al. (2019), online language games enhance students' confidence and self-esteem. Jclic is an interactive computer program where the students can carry out many educational activities in a playful way, helping students correct themselves while improving their comprehension skills of texts in English (De La Cruz et al., 2020). Surala provides autonomous learning, gives students feedback, motivates them while increasing their creativity (Matsumoto, 2016). Letchumanan et al. (2015) compared paper-based and computer-based games in their research. They stated that in the language syllabus, including games to teach languages, vocabulary may be learned more interestingly. MALL had the highest percentage of 38% on behalf of

gamification and VR. It creates a fun, enjoyable learning environment. With the successful integration of these ICT tools, pupils would have the possibility and chance for effective and meaningful language enhancement (Azar & Tan, 2020). Different games have several pros in terms of their effects on learning.

Gamification Elements

Gamification elements were examined in the studies. Toda et al. (2019) presented gamification elements in five dimensions: ecological, social, performance/measurement, fictional, and personal. According to De La Cruz et al. (2020), gamification techniques can be deployed in three areas called emotional, social, and cognitive. Emotional experiences like curiosity, joy, frustration, optimism, and repeated failure help students learn by making mistakes. Social experiences facilitate the learning and teaching process. It is supported by research on finding a new way to teach grammar and vocabulary in English as a second language. Challenges, badges, rank/leaderboard, unlock/levels, points, progress bar, storyline, and teams are some gamification elements. Some gamification elements were mentioned in the applied game's part. Additionally, Kahoot!'s design fostered students' learning, also the structure of rewards not only leaderboard and points but also competition in Kahoot! raised students' interest (Anisa et al., 2020). According to Rajendran et al. (2019), Quizizz was used as a tool to assess students since it records the scores, percentages, and results that were able to be downloaded manually. Points-based systems and leaderboards were found motivating by students, and digital game mechanics improved students' argumentative writing and increased their online contribution.

Due to students' reading and responding to each other's posts, peer feedback and interaction were more effective (Lam et al., 2017). When students play with SMARTies, they can exhibit their level indirectly or directly, and teachers can assess their progress (Lee, 2016). According to Hashim et al. (2019), online language games motivate students and help them improve their results and grammar in ESL. JClic software-generated contemporary changes in the learning-teaching process. It allowed students to be involved, develop their autonomy, self-evaluation, and understanding of the learning process (De La Cruz et al., 2020). According to Matsumoto (2016), it is essential to conduct gamification elements in flipped learning for second language learning, considering learners' characteristics and their pedagogies' ideal achievement level. After students accomplished the tasks, students learned from their mistakes and some trials according to incidental learning (Letchumanan et al., 2015). According to Azar and Tan (2020), gamification included scaffolding concepts and helped students to have real-world experience. MALL was easy to access in terms of time and space, and VR enabled the learners' interaction by different types of actions and social skills. Learners' perceptions towards gamified learning were examined, games created a positive learning environment, students had fun, and departed knowledge to learners successfully (Rafiq et al., 2019). As a result, gamification is a challenging way for students to help their meaningful English learning. In a fun and healthy competition atmosphere, students challenge themselves, allowing them to improve their autonomous learning.

Synthesis of Results

There was no meta-analysis, but results displayed that students learn English meaningfully, including all English language skills with gamification. Students' grammar, vocabulary acquisition, comprehension, understanding texts, creativity, intrinsic and extrinsic motivation improve with the help of gamification. Instead, the research about argumentative writing has no positive results about gamification. For example, blended learning + gamification experimental group members explained their ideas about the topic instead of challenging other people's opinions. Some students were not confident enough to put forward opposing views, and gamification focused on explaining skills using evidence.

DISCUSSION

Summary of Evidence

This review aimed to explore gamification effects on ESLL for 11-18-year-old students. Gamification in ESL research holds essential results. A healthy competition environment helps students to compete, boost their participation and motivation. Choosing the appropriate game answers students' needs. In terms of students' characteristics, gamification helps students reach the ideal level of success. Some new software like Jclic can be used by teachers optimally. Thus, students' will display great success since their needs met. Studies about writing demonstrated that gamification helps students' self-judgment and self-monitoring during the process. By self-correction, students tend to write essays in a better way. Gamification is also effective for grammar teaching. Online language games help students to achieve success, including motivation and fun. Language games allow students to learn vocabulary at their own pace, autonomously, and in an environment without language barriers. In classes, students' attention raises, quick feedback gives students time to learn, positive communication is another pro of gamification in ESLL. Shy students also compete, and students' weaknesses and strengths can be measured easily. By gamification, students' intrinsic and extrinsic motivation rises.

CONCLUSION

This review includes the studies explaining the effects of gamification and the tendency to use games for 11-18-year-old students' learning English as a second language. According to students' needs, gamification elements boost students' motivation and help them learn in a healthy competition environment (Rajendran et al., 2019). Students' interest in playing contributes to increasing their self-esteem and confidence level in learning grammar (Hashim et al., 2019). Autonomous learning has great importance in the 21st century. While students are responsible for their learning, their extrinsic and intrinsic motivation and participation increase (Anisa et al., 2020). Games about language may be a functional strategy for learners to obtain vocabulary in a non-threatening and fun-filled environment. Shy and slow learners may play games at their own pace. Additionally, students learn autonomously by referring to dictionaries in electronic or print modes to discover meanings of words that they have problems with (Letchumanan et al., 2015).

When the recognized dialect perspectives have been genuinely considered, utilizing games in the classroom offers advantages (Lee, 2016). New gamification elements are accepted and accessed by learners to help them develop their self-evaluation and autonomy. Since learners are involved, they understand the process of learning (De La Cruz et al., 2020). Matsumoto (2016) stated that Game-based content keeps learners' learning motivation high and creates creativity more. Due to ICT techs like gamification, learners with high motivation may learn English effectively (Azar & Tan, 2020). Instant feedback is also an excellent opportunity for students (Lam et al., 2017). According to Rafiq et al. (2019), students' perceptions about language learning games were surprisingly positive; they found them fun, attractive, encouraging, motivating aside from games helped improve their self-esteem and learning experience. It is a great opportunity since teachers need a positive learning environment. It is noteworthy that teachers give feedback to students, though students may forget the question and cannot remember their answers immediately. Learners' autonomy is a crucial element of language learning since they can control their learning process. Learning by doing and having fun at the same time is the key to gamification. Because it helps students learn from their mistakes immediately to improve their English language skills. By including gamification elements into instruction, shy students may participate more in English language learning activities. Therefore, gamification helps teachers to improve and evaluate students' language skills quickly.

Suggestions

In this review, primarily computer-based gamification is included. The studies do not have much information about the dynamics of gamification. Future research may consist of more words and more dynamics about gamification in ESLL in an extended period. Flipped classrooms and online teaching are popular these days due to pandemic quarantines. Hence, the following research may include gamification in flipped learning.

Limitations

The studies chosen for the review were sampled in classes in different countries and different topics and skills. Researchers did not design games. Therefore, they chose the games which were developed or designed by an expert. The review is limited to the keywords and the databases mentioned earlier.

REFERENCES

Alliant International University Library. (2017, June 30). *Educational research/shawn nunnally: Useful databases.* https://alliant.libguides.com/c.php?g=692753&p=4908081

Anisa, K. D., Marmanto, S., & Supriyadi, S. (2020). The effect of gamification on students' motivation in learning English. *Leksika: Jurnal Bahasa, Sastra dan Pengajarannya, 14*(1), 22–28. <ALIGNMENT.qj></ALIGNMENT>10.30595/lks.v14i1.5695

Aydın, T. (2014). Dil öğretimi ve oyun -Çoklu zekâ teorisi ışığında [Language teaching and games -In the light of multiple intelligence theory]. *Dinbilimleri Akademik Araştırma Dergisi, 14*(1), 71–83. https://dergipark.org.tr/tr/pub/daad/issue/4484/61796

Azar, A. S., & Tan, N. H. I. (2020). The application of ICT techs (Mobile-assisted language learning, gamification, and virtual reality) in teaching English for secondary school students in Malaysia during COVID-19 pandemic. *Universal Journal of Educational Research*, *8*(11C), 55–63. doi:10.13189/ujer.2020.082307

Barab, S. A., Gresalfi, M., & Arici, A. (2009). Why educators should care about: Games. *Educational Leadership, 67*(1), 76–80. https://asu.pure.elsevier.com/en/publications/why-educators-should-care-about-games

De La Cruz, K. M. L., Noa, L. M. F., & Ayca, K. L. L. (2020). Gamification for understanding English texts for students in a public school in Peru. *International Journal of Developmental Research*, *10*(10), 41787–41791. doi:10.37118/ijdr.20319.10.2020

Dehghanzadeh, H., Fardanesh, H., Hatami, J., Talaee, E., & Noroozi, O. (2019). Using gamification to support learning English as a second language: A systematic review. *Computer Assisted Language Learning*, 1–24. doi:10.1080/09588221.2019.1648298

Denyer, D., & Tranfield, D. (2009). Producing a systematic review. In D. A. Buchanan & A. Bryman (Eds.), *The Sage Handbook of Organizational Research Methods* (pp. 671–689). Sage Publications Ltd.

Fatta, H. A., Maksom, Z., & Hafiz Zakaria, M. (2018). Game-based learning and gamification: Searching for definitions. *International Journal of Simulation: Systems, Science & Technology, 19*(6), 41.1–41.5. 10.5013/IJSSST.a.19.06.41

Flores, J. F. F. (2015). Using gamification to enhance second language learning. *Digital Education Review*, (27), 32–54. https://dialnet.unirioja.es/servlet/articulo?codigo=5495904

Gozcu, E., & Caganaga, C. (2016). The importance of using games in EFL classrooms. *Cypriot Journal of Educational Sciences*, *11*(3), 126–135. doi:10.18844/cjes.v11i3.625

Growth Engineering. (2019, August 29). *The history of gamification (from the very beginning to now).* https://www.growthengineering.co.uk/history-of-gamification/

Hashim, H., Rafiq, R. M., & Yunus, Md. M. (2019). Improving ESL learners' grammar with gamified-learning. *Arab World English Journal, 5*. 10.2139/ssrn.3431736

International Standard Classification of Education ISCED. (2011). *UNESCO UIS*. UNESCO Institute for Statistics. Retrieved from https://circabc.europa.eu/sd/a/84d88f97-9cc7-45be-963f-ed088440b04b/ISCED%202011%20Operational%20Manual.pdf

Lam, Y. W., Hew, K. F., & Chiu, K. F. (2017). Improving argumentative writing: Effects of a blended learning approach and gamification. *Language Learning & Technology*, *22*(1), 97–118.

Lee, H. L. J. (2016). SMARTies: Using a board game in the English classroom for edutainment and assessment. *Malaysian Journal of ELT Research*, *8*(1), 1–35. https://journals.melta.org.my/MAJER/ downloads/majer08_01_01.pdf

Letchumanan, K., Tan, B. H., Paramasivam, S., Sabariah, M. H., & Muthusamy, P. (2015). Incidental learning of vocabulary through computer-based and paper-based games by secondary school ESL learners. *Pertanika Journal of Social Science & Humanities*, *23*, 725–740. http://psasir.upm.edu.my/id/eprint /15681/1/12%20JSSH%201216-2014.pdf

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P., & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and elaboration. *Journal of Clinical Epidemiology*, *62*(10), e1–e34. doi:10.1016/j.jclinepi.2009.06.006 PMID:19631507

Maloney, S. (2019, July 2). *Gamification in English language teaching: More than a child's play*. Retrieved from https://hongkongtesol.com/blog/2019/07/gamification-english-language-teaching-more-childs-play

Matsumoto, T. (2016). The flipped classroom experience of gamified. *Creative Education*, *7*(10), 1475–1479. doi:10.4236/ce.2016.710152

Mccormick, T. (2013). Anthropology of an idea: gamification: why everybody, from corporate titans to terrorists, wants to make life more like a game. *Foreign Policy*, (201), 26–27. https://foreignpolicy.com/2013/06/24/gamification-a-short-history/

Morthy, D. K., & Abdul Aziz, A. (2020). The use of language games in enhancing ESL learners' sentence construction. *International Journal of Academic Research in Business & Social Sciences*, *10*(9), 16–32. doi:10.6007/IJARBSS/v10-i9/7695

Rafiq, K. R. M., Hashim, H., Yunus, M. M., & Pazilah, F. N. (2019). Gamified-learning to teach ESL grammar: Students' perspective. *Religación, 4*, 181–186. https://www.neliti.com/publications/331813/ gamified-learning-to-teach-ESL-grammar-students-perspective#cite

Rajendran, T., Naaim, N. A. B., & Yunus, M. M. (2019). Pupils' motivation and perceptions towards learning English using Quizvaganza. *International Journal of Scientific and Research Publications*, *9*(1), 1–9. doi:10.29322/IJSRP.9.01.2019.p8529

Seaborn, K., & Fels, D. I. (2015). Gamification in theory and action: A survey. *International Journal of Human-Computer Studies*, *74*, 14–31. doi:10.1016/j.ijhcs.2014.09.006

Tivaraju, J., Yunus, M., & Badusah, J. (2017). Learning English is fun via Kahoot: Students' attitude, motivation and perceptions. In *Proceedings on Seminar on Transdisiplin Education (STEd2017)* (pp. 218–229). https://sted18.files.wordpress.com/2016/12/1-26-jemima-tivaraju-melor- md-yunus-jamaluddin-badusah.pdf

Toda, A. M., Klock, A. C., Oliveira, W., Palomino, P. T., Rodrigues, L., Shi, L., Bittencourt, I., Gasparini, I., Isotani, S., & Cristea, A. I. (2019). Analysing gamification elements in educational environments using an existing gamification taxonomy. *Smart Learning Environment*, *6*(1), 1–14. doi:10.1186/s40561-019-0106-1

APPENDIX

Table 2. Quantitative description of the reviewed articles about gamification in ESLL in secondary education aged between 11-18

Article	Purpose	Author(s)	Publication Source	Learning environment	Methodology	Data collection method	Duration	Data Analysis Method	N	Gamification elements	Learning experiences	Various learning outcomes	Learning outcomes/ CLL
Improving ESL Learners' Grammar with Gamified-Learning	Exploring the effectiveness of using online language games in improving ESL learners' grammar.	Hashim, H., Rafiq, K. R. M., & Yunus, M. M.	Arab World English Journal (AWEJ) Special Issue on CALL (5). 41-50	Socrative, PowerPoint Challenge Game, and Kahoot!	Quasi-experimental study	A pre-test with three sessions of intervention, and a post-test	3 weeks	Frequency count and scores from the tests were converted into percentages as standardized by the Ministry of Education Malaysia	30	Challenge, feedback, competitive.	Motivating, fun, confident, self-esteem	Motivation	Grammar
Incidental Learning of Vocabulary through Computer-Based and Paper-Based Games by Secondary School ESL Learners	Investigating the effectiveness of a blended learning approach—involving the thesis, analysis, and synthesis key (TASK) procedural strategy; online Edmodo discussions; online message labels; and writing models.	Letchumanan, Tan, B. H.2, Paramasivam, Sabariah, M.,Muthusamy P.	Pertanika J. Soc. Sci. & Hum. 23 (3): 725 - 740 (2015)	Paper-Based Games, Computer-Based Games (General Service List (GSL) words)	Quasi-experimental study	A pre-test, two experimental groups, group 1 computer-based games, group 2 paper-based games, and a post-test. Then they switched and another post-test.	14 weeks	Based on the pre- and post-treatment data, a further statistical analysis using the paired-sample t-test and independent sample t-test was carried out.	70	Competition, motivation, repetition.	Fun, non-threatening, autonomous learning	Facilitating comprehension	Vocabulary, Writing skills
Improving argumentative writing: Effects of a blended learning approach and gamification	Investigating the effectiveness of a blended learning approach—involving TASK procedural; on student argumentative writing. Examining whether the application of digital game mechanics increased student online contribution and writing performance.	Lam, Y. W., Hew, K. F., & Chiu, K. F.	Language Learning & Technology, 22(1), 97–118	Edmodo, online message	A combination of quasi-experimental and qualitative research methods	A pre-test, post-test writings, face to face interview	7 weeks	ANCOVA for tests and the grounded approach for an interview	n1=22 n2=30 control=20	Motivating, sense of achievement, focusing, interaction, feedback.	Self-monitoring	Argumentation	Writing skills
Gamified-Learning to Teach ESL Grammar: Students' Perspective	To find out the perceptions of students towards gamified-learning.	Rafiq, K. R. M., Hashim, H., Yunus, M. M., & Pazilah, F. N.	Religación, 4, 181-186.	Online language games	Quantitative	A questionnaire	-	Frequency count from the questionnaire	30	Fun, motivating, encouraging.	Enhancing confidence, improving self-esteem	Positive learning	Grammar
SMARTies: Using a board game in the English classroom for edutainment and assessment	Using a board game in the English classroom for edutainment and assessment.	Lee, H. L. J.	Malaysian Journal of ELT Research, 8(1), 35.	SMARTies: A board game	An experimental study	A Pre-test, a post-test, a questionnaire	-	A paired t-test, descriptive analysis, content analysis	30	Challenging to complete, attention, fun, engaging.	Meaningful, academically rewarding.	Non-Threatening learning, improving students' performance and achievement	Grammar, spelling, vocabulary, synonyms, homophones, idioms, proverbs, abbreviation

Table 2. Continued

Article	Purpose	Author(s)	Publication Source	Learning environment	Methodology	Data collection method	Duration	Data Analysis Method	N	Gamification elements	Learning experiences	Various learning outcomes	Learning outcomes/ CLL
The effect of gamification on students' motivation in learning English.	Investigating the effect of gamification on students' motivation in learning English.	Anisa, K. D., Marmanto, S., & Supriyadi, S.	Leksika: Jurnal Bahasa, Sastra dan Pengajarannya, 14(1), 22-28.	Kahoot!	A descriptive case study	Students' intrinsic motivation questionnaire, Students' extrinsic motivation questionnaire, interview	-	The data gathered from the questionnaires and interviews analyzed through three stages of data reduction, data display and conclusion.	13	A positive effect on students' motivation(the intrinsic and extrinsic motivation). Learning is enjoyable. Engaging, attractive.	The experience of autonomy (ability to make a decision independently), competence (ability to solve problems), and relatedness (ability to socialize).	Gamification serves as an alternative way to teach English at the secondary level. Learning becomes more meaningful, purposeful, and motivating./ New Media Literacy Studies (NMLS).	Overall
Gamification for understanding English texts for students in a public school in Peru.	Determining the results of the JClic Software application as a tool of gamification in comprehension of texts in English.	De La Cruz, K. M. L., Noa, L. M. F., & Ayca, K. L. L.	International Journal of Development Research, 10(10), 41787-41791.	JClic Software application	A pre-experimental design	Pretest and posttest with only one group	One semester	Comparative analysis of the pretest and the posttest.	16	Challenges, badges, rank/ leaderboard, unlock/ levels, points, progress bar, storyline and teams	An interactive computer program, where the students can carry out a large number of educational activities in a playful way. Self-correcting.	Improving the comprehension skills of texts in English	Reading, comprehension, grammar, vocabulary.
The flipped classroom experience of gamified.	Discussing the pros and cons of gamification of education, the authors conducted an experiment and questionnaire using flipped classroom with gamification elements for English as foreign language education/ The effectiveness of e-Learning with gamification elements.	Matsumoto, T.	Creative Education, 7(10), 1475.	Surala	An experimental study	An experiment & An open-ended questionnaire	Twice a week from April to December	After elimination, free written data of 105 students were analyzed using quantitative text analysis.	174	Feedback, autonomous agents.	Creativity, motivation, enhance their intrinsic motivation towards goal achievement.	Gamification Design for the E-Learning (GDE) nurturing positive learning attitudes	Overall
The Application of ICT Techs (Mobile-assisted Language Learning, Gamification, and Virtual Reality) in Teaching English for Secondary School Students in Malaysia during COVID-19 Pandemic.	1) To find out University interns' perceptions on the use of ICT Techs in teaching English for secondary students during the Covid-19 Pandemic. 2) To investigate which of these ICT Techs would be most preferred by the University interns.	Azar, A. S., & Tan, N. H. I.	Universal Journal of Educational Research, 8(11C), 55-63.	MALL, Gamification, and VR	Quantitative	A web-based questionnaire was adapted from three articles.	-	SPSS	63	Fun and challenging.	Fun and enjoyable environment for students to learn.	Motivation and participation	Overall
Pupils Motivation And Perceptions Towards Learning English Using Quizvaganza	The objectives of this study are to investigate the motivation and perceptions in learning English using Quizvaganza among secondary school pupils'.	Rajendran, Tamilarasu & Naaim, Nor & Yunus, Melor.	International Journal of Scientific and Research Publications (IJSRP). 9. p8529. 10.29322/ IJSRP.9.01.2019. p8529.	Quizvaganza, Quizizz	Action Research	Conducted three different skills from the same topic after they completed the lesson each day. Likert Scale questionnaire and semi-structured interview questions.	-	The results of the questionnaires and interview were shown in figures and tables.	40	Healthy competition, fun.	Motivation, healthy competition, positive communication, active, attention	Positive communication, exploring, student-centered.	Overall

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