

The Impact of Gamification on Music-Integrated Language Learning

O Impacto da Gamificação na Aprendizagem de Línguas Integrada à Música



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Abstract: It has been acknowledged that incorporating music and gamification into the classroom is a successful strategy for raising student enthusiasm and engagement. This study looks at how secondary school pupils' acquisition of the English language is affected when gamified programs and music-based learning are combined. Focus groups, pre- and post-tests, and motivation surveys were all a part of the mixed-methods strategy. The percentage of pupils with high-level English rose from 20% to 30%, while the percentage with low-level English fell from 13% to 10%, indicating a discernible improvement in language competency. After the program, 75% of students scored higher on the motivation scale, up from fewer than 7% previously. This indicates a considerable increase in motivation levels. According to qualitative feedback, students thought the activities were interesting, fun, and helpful for their learning. These results imply that gamification and music can work together to improve language learning motivation and proficiency. The study's practical implications include the possibility that educational institutions could use gamified, music-integrated methods to enhance language learning and student performance.

Keywords: Bubbles. Duolingo. Factile. gamified learning. Kahoot!. motivation. music-integrated learning. second language learning.

Resumo: Reconhece-se que a incorporação da música e da gamificação na sala de aula é uma estratégia bem-sucedida para aumentar o entusiasmo e o envolvimento dos alunos. Este estudo analisa como a aquisição da língua inglesa pelos alunos do ensino secundário é afetada quando se combinam programas gamificados e aprendizagem baseada na música. Os grupos de foco, os pré e pós-testes e os inquéritos de motivação fizeram parte da estratégia de métodos mistos. A percentagem de alunos com um nível elevado de inglês aumentou de 20% para 30%, enquanto a percentagem com um nível baixo de inglês desceu de 13% para 10%, indicando uma melhoria notória na competência linguística. Após o programa, 75% dos alunos obtiveram pontuações mais elevadas na escala de motivação, acima dos anteriores menos de 7%. Isto indica um aumento considerável dos níveis de motivação. De acordo com o feedback qualitativo, os alunos consideraram as atividades interessantes, divertidas e úteis para a sua aprendizagem. Estes resultados sugerem que a gamificação e a música podem trabalhar em conjunto para melhorar a motivação e a proficiência na aprendizagem de línguas. As implicações práticas do estudo incluem a possibilidade de as instituições de ensino poderem utilizar métodos gamificados e integrados na música para melhorar a aprendizagem de línguas e o desempenho dos alunos.

Palavras-chave: Bubbles. Duolingo. Factile. aprendizagem gamificada. Kahoot!. motivação. aprendizagem integrada à música. aprendizagem de segunda língua.

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Introduction

Learning foreign languages in today's world is one of the main levers for future development in the lives of pupils and students. At the same time, learning a foreign language is a complex and challenging process that requires considerable attention, effort, and a strong desire to learn (Akbari et al., 2018). In the era of digitalization and technological advancement, methodologists and developers in the field of education are seeking new methods and approaches for effective learning of a second foreign language (Tsang, 2020). One of the primary modern methods and aspects in this field is language learning with the help of various technological elements, which include music and watching video materials (such as films, series, podcasts, and short videos on social networks). It also provides language learning based on modern digital platforms and video games, which are an effective means of learning a foreign language (Yanes and Bououd, 2019). In the context of learning English as a second foreign language, there are several challenges associated with language learning. During the study of new vocabulary, students and pupils face such problems as the selection of vocabulary for study, that is, the lexicon necessary for the successful operation of terms during communication (Larrouy-Maestri et al., 2013). Textbooks provided to students and pupils in educational institutions, in most cases, have a minimal selection of relevant vocabulary for study. In other cases, this lexical selection is primarily applicable in the years of the textbook's release. Still, for further use by students and pupils after several years, such vocabulary usually loses its relevance (Zhou and Bakhir, 2024). In this case, new methods using video games or music compositions can be a more effective source for vocabulary selection, since the music and gaming fields are evolving and constantly improving, and releasing new games or music. Thus, students and pupils can always be aware of the current vocabulary that is used among the population (Chou, 2014).

Also, one of the difficulties in learning a second foreign language is constant expressions, that is, phrasal verbs. To study them, students need to pay a lot of attention, because they are directly one of the critical factors in live communication. In addition, the occurrence and termination of phrasal verbs is a common phenomenon that requires constant improvement in studying and reviewing their presence (Almufareh, 2020). Textbooks do not always cover the full range of information needed on this topic, and the selection of these words is somewhat limited. In this case, using learning methods such as watching TV series or movies in a foreign language, listening to music, or using a game format can bring a large number of new, necessary, and essential words, as well as facilitate fluent communication in a foreign language (Sin and Said, 2020).

Incorporating a musical format into learning a foreign language is also one of the valuable methods when learning specific language structures and rules. In particular, this applies to learning the stress in words, understanding the duration of syllables, etc. Thus, during listening, students learn new information about the correct pronunciation of certain words and later can apply it in real communication (Almufareh, 2021).

In addition, the inclusion of new methods, such as the use of a game format and music, can contribute to increasing motivation to study among students and pupils in the context of learning foreign languages. Such a factor is an integral part of the importance of the psychological state of students in classes because the more students are encouraged and involved in learning, the greater the probability that good results will be predicted at the end of the educational process (Subotnik and Lee, 2018). The involvement of new methods with the help of various platforms of games, music, and digital resources also develops the creativity skills of students and pupils. With the help of such methods, students can not only learn a foreign language with benefits but also acquire useful and interesting information presented in these resources, which can later become one of their hobbies or activities outside of

school or university (Dörnyei and Al-Hoorie, 2017). There is a large amount of information on the integration of new methods into the learning process, in particular, the study of a foreign language, but research on the application of methods in game and music formats is presented in a relatively small amount. Thus, this study aims to rectify the imbalances in previous studies and supplement the existing knowledge in this field with new findings and original experimental data.

Literature review

Because it combines emotional and cognitive stimulation, music is generally considered to be one of the best resources for assisting second language acquisition. Research has shown that the emotional aspect of music enhances hearing, perception, and pronunciation (Ahmed and Sutton, 2017). Students who listen to songs with lyrics improve their oral fluency and accent in addition to their listening comprehension (Le Pichon et al., 2024). While traditional audio and textbook exercises often fail to sustain interest, music offers novelty and a personal connection that can stimulate consistent practice (Toda et al., 2019; Yıldırım and Şen, 2021). This approach has become more relevant as modern students prefer approaches that align with popular culture, making music a motivating and relatable tool in the classroom (Blanco-Novoa et al., 2023).

Numerous studies attest that music actively aids in vocabulary development. Compared to rote memory, learners who are exposed to their favorite songs regularly are more likely to internalize words and phrases (Caeiro et al., 2021; Zou et al., 2021). Since music frequently permeates students' daily life, this influence goes beyond formal education and doubles the opportunity for practice and vocabulary reinforcement (Cores-Bilbao et al., 2019). Researchers also point out that active participation, like taking notes or using a dictionary, improves learning results; background listening alone is inadequate (Torras Vila, 2021).

Recent research supports these findings, demonstrating that music-integrated tasks not only increase language proficiency but also foster creativity and self-esteem in language learners (Chen et al., 2024). The long-term memory effect of music is also emphasized: melodies and rhythms help learners retain words and expressions for extended periods, sometimes years after initial exposure (Degrave, 2017; Parker, 2020).

At the same time, gamification has emerged as a popular teaching strategy that incorporates game-like elements into classroom settings in an effort to boost student engagement. To promote active involvement, English as a Foreign Language (EFL) classrooms have embraced features like points, leaderboards, badges, and avatars (Boyinbode, 2018; Díaz and Zajia, 2020; Mufidah, 2016). When gamification is combined with interactive learning activities that require critical thinking, problem-solving, and teamwork, it works exceptionally well (Lim et al., 2022). Student or group competitions enhance cooperation, foster connections, and cultivate an inspiring environment—all of which support successful learning outcomes (Panmei and Waluyo, 2022; Yanes and Bououd, 2019).

Crucially, gamification in conjunction with music seems particularly promising. While gamification adds involvement and structured rewards, music offers a natural route for emotional engagement and memorization (Petersen et al., 2022). When combined, they produce an immersive setting that enhances learning's emotive and cognitive components. Research has shown that gamified music-based activities maintain learner interest and improve vocabulary memory (Zainuddin et al., 2020).

Furthermore, new research suggests that technology-enhanced strategies, which combine music and gamification, such as VR environments or mobile applications, can promote vocabulary acquisition and motivation in quantifiable ways (Jiao, 2025). Researchers warn, nonetheless, that if such approaches are not maintained with different content and well-balanced challenges, novelty effects may result in a drop in motivation (Georgeson et al., 2020).

Literature shows limits despite increased attention. Few studies systematically explore the combined use of music and gamification in foreign language learning, while many focus on either one alone. The available data is frequently restricted to short-term treatments and dispersed among various learner demographics. To assess how gamification and music can enhance long-term motivation, competence, and learner autonomy, more research is required. By examining the impact of a systematic, music-integrated gamification program on language competency and motivational outcomes in English learning, this study fills the knowledge gap.

Problem statement

The **motivation** for conducting this research was the need to clarify the impact of the use of music and gamification elements in the learning process. Also, the motivation was the development of a new method for teaching and learning English using a musical format and elements of gamification.

The **objectives** of this research are:

1. To develop a curriculum using elements of gamification and a musical format.
2. To analyze the impact of the curriculum using gamification and music on the effectiveness of foreign language learning by students.
3. To investigate the impact of the curriculum using gamification and music on motivation during foreign language learning by students.

Methods and Materials

Research design

The research design consists of pre-testing students to obtain data on their previous level of knowledge of the English language. After testing the level of language knowledge, a focus group survey

was conducted, which aimed to obtain data on attitudes towards elements of gamification and musical format in the process of learning English. A 7-point Likert scale survey was also conducted, which aimed to determine the level of students' learning motivation during the study. Questions related to work during classes, students' feelings, their emotions, and their psychological state in general (Pintrich and de Groot, 1990). After this survey, students were asked to go through a specially designed educational program using elements of gamification and a musical format in order to reveal the impact on the success and efficiency of the educational process and learning English, as well as the impact on the level of motivation of students. After completing this training program, students took a post-test, the purpose of which was to determine the presence of changes in the level of knowledge of the English language. After passing this test, students were asked to take a survey aimed at determining students' attitudes towards the completed educational program, as well as changes in their level of motivation. After that, the obtained experimental data were systematized, and conclusions were drawn.

Method

The study includes pre- and post-testing to determine the level of English language proficiency, completion of the developed educational program, and pre-and post-surveys of the focus group. At the beginning of the study, students passed a preliminary test on the level of English language proficiency (Appendix 1). This test included many questions (both open and closed). The testing was developed based on the materials passed by the students, in particular, which included the identification of the level of knowledge of such skills as speaking, listening, and writing. Also, some tasks included tests on English vocabulary and grammar. Additionally, in conjunction with the test, the students were assigned one of the speaking exercises, which required them to discuss one of the given topics with their teacher. Each task provided a certain number of points for completion. The first listening task required 5 points for each sub-item. The two writing tasks offered 10 points for correct

performance. Students could get 3 points for two exercises. But you could get 10 points for speaking. In total, students could get 36 points if everything was done perfectly. Students who scored up to 10 points were assigned to a low level of English proficiency. Students who scored between 10 and 25 points were categorized as having an average level of proficiency. Students who scored from 25 to 36 points were considered to have a high level of English proficiency. The tasks were developed with the students' teachers so that the students worked on the tasks that were explained to them earlier in the classes.

The next step was to conduct a preliminary discussion in a focus group, which aimed to determine students' attitudes towards the learning process using elements of gamification and motivation. The questions were open, and all students had the opportunity to express their opinions and answer the questions asked by the research group. This discussion was conducted to understand in more detail the views of students regarding their level of motivation and the use of gamification in education before completing the curriculum.

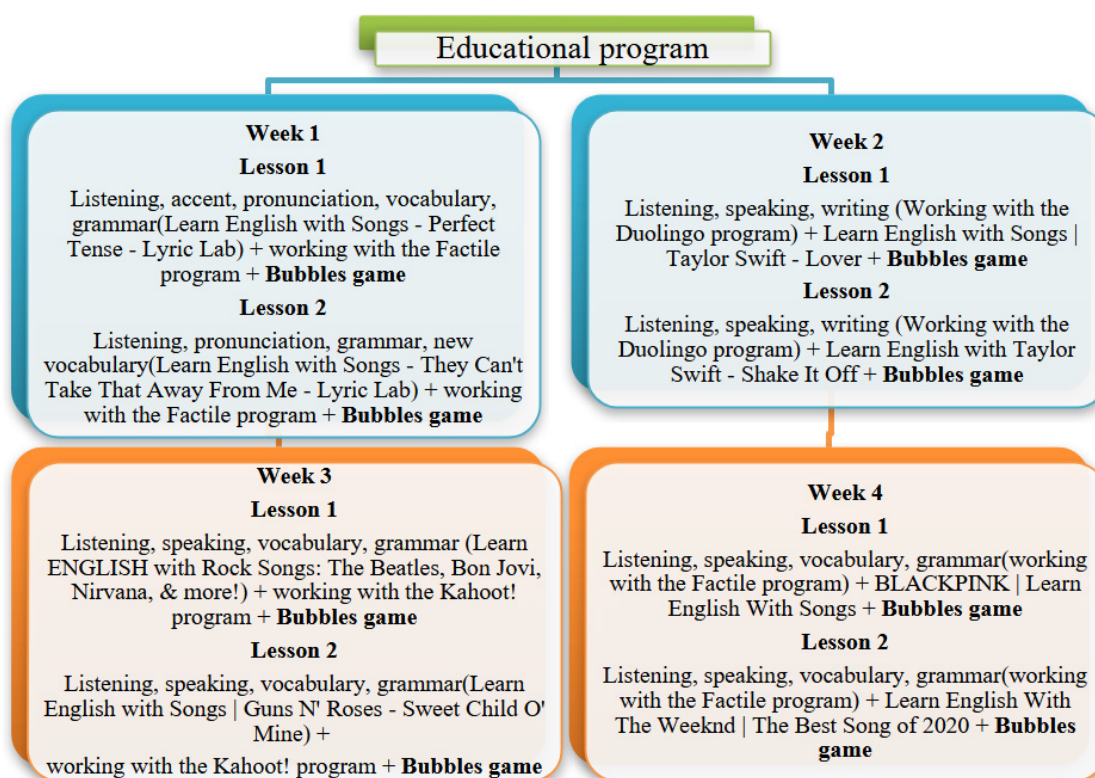
Participants

To participate in this study, 60 students from Nanjing Foreign Language School were invited. The students were 14 to 15 years old. Sampling was done in this way and in this age range because, among all educational institutions that were offered to participate in the study, the largest number of students from this academic institution and in this age range appeared to participate in the study. The sample consisted of 30 female students and 30 male students.

Learning intervention

Following a focus group discussion, the students were offered a specially designed curriculum incorporating gamification and musical elements to enhance their English language learning (Figure 1).

Figure 1 - Educational program for students

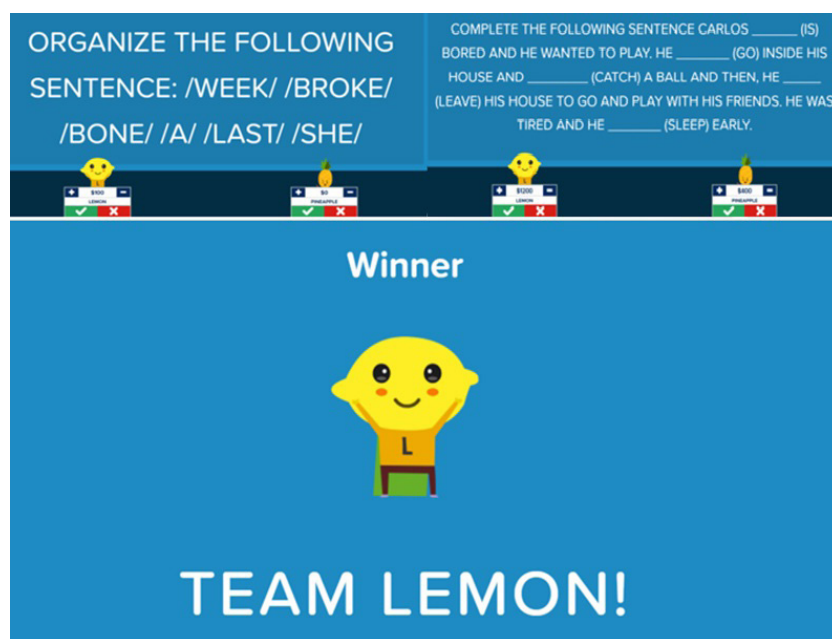


Source: elaborated by the author

The training program is designed for 4 weeks, which includes two classes per week. During the first week, students had two sessions; the first two sessions focused on developing listening skills, improving accent, pronunciation, and learning new words and grammar. For this, students were offered the use of a musical format and elements of gamification. The lyrical songs “Perfect Tense” and “They Can’t Take That Away From Me” were used as the musical format. These musical compositions were chosen precisely for their lyrical format, as their slowness and melodiousness make it easy to recognize all the words, identify their meanings, and pronounce them correctly. Also, these compositions were chosen because they contain a large number of words that are necessary for learning, so that students can communicate freely.

Also, for these classes, a gamified program for learning English called “Factile” (Appendix 1) was used, which is one of the most popular gamified programs for learning foreign languages (Figure 2).

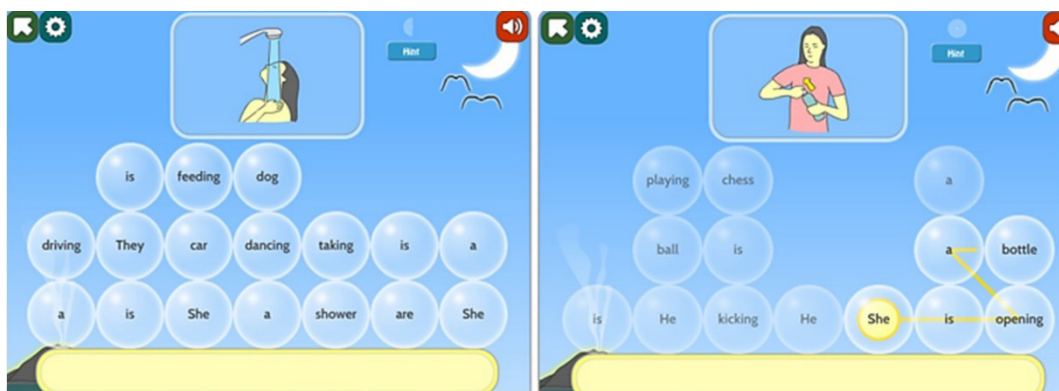
Figure 2 - The use of the gamified program “Factile” for learning English



Source: author's elaboration based on the information from the “Factile” program

This program contains many functions for conducting interesting classes in a game format. In particular, it contains various quizzes, puzzles, and interesting tasks aimed at developing multiple skills such as grammar, learning new vocabulary, etc. The program is designed to work in teams, where participants can choose a team name and receive points for correct answers. At the end of the game, the team with the most points wins first place. Also, the game Bubbles (Figure 3), which is aimed at learning new words, was chosen for two classes (Appendix 1).

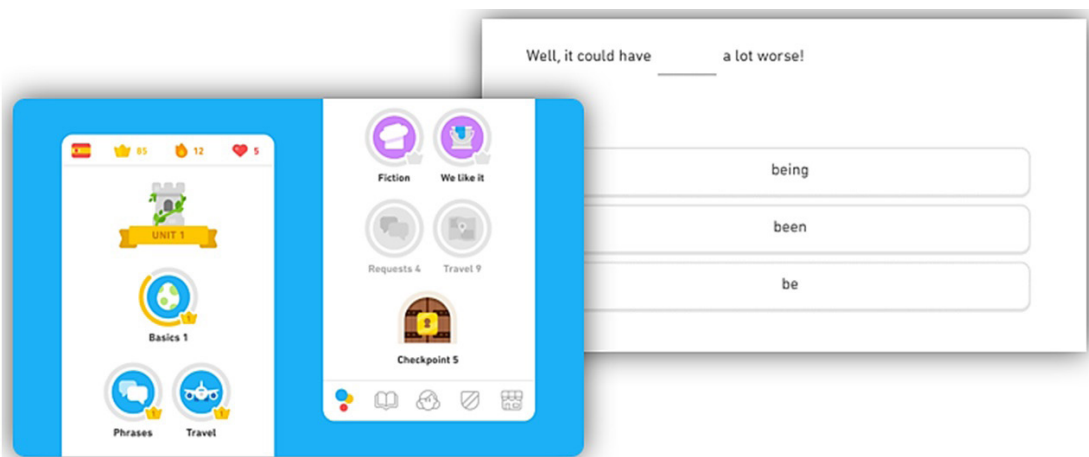
Figure 3 - The use of the gamified program “Bubbles” for learning English



Source: author's elaboration based on the information from the “Bubbles” program

This game presents an engaging feature suitable for both younger and older students. It takes the form of a puzzle, challenging players to construct grammatically correct sentences. For classes in the second week of study, students were asked to use the Duolingo (Appendix 1) gamified program, which aims to develop several skills, including listening, speaking, writing, pronunciation, grammar, new vocabulary, and others (Figure 4). Gamified elements in the program, such as points for correct answers, leaderboards, and awards, make learning more engaging and encourage students to continue learning.

Figure 4 - The use of the gamified program “Duolingo” for learning English



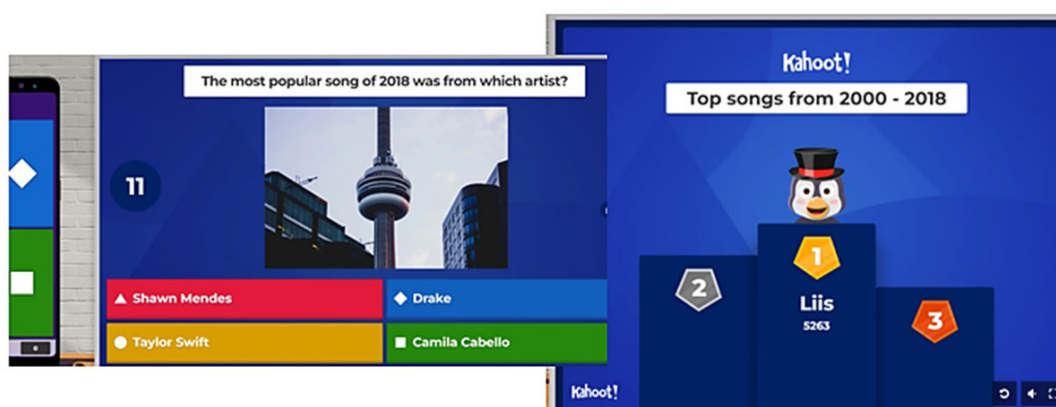
Source: author's elaboration based on the information from the “Duolingo” program

For the classes in the second week, such musical compositions as “Taylor Swift - Lover” and “Taylor Swift - Shake It Off” were used (Appendix 1). These musical compositions were chosen because they are performed in the style of pop music and feature a pronounced melodic rhythm, which allows you to practice the skills of free communication and correct word pronunciation. Also, these compositions are full of numerous phrasal words that are useful for students to learn English. Also, for these two classes, the game Bubbles was used to improve vocabulary.

For the third week of study, students were asked to study with the help of a musical format, in particular through the number of compositions by singers, many compositions by singers who

perform compositions in the style of rock “Rock Songs: The Beatles “A Hard Day’s Night”, Bon Jovi “Living On a Prayer”, Nirvana “Come as you are” and “Guns N’ Roses - Sweet Child O’ Mine (Appendix 1)”. These musical compositions are chosen in the rock style, as they are popular among people of all ages. In addition to practicing pronunciation and listening, these compositions are useful for students because of the large number of new words and expressions for communication and use in English. Also, for classes in week 3, students were offered the use of the gamified program Kahoot! (Figure 5), which is aimed at improving teamwork skills and knowledge in the field of music, grammar, vocabulary, etc. (Appendix 1).

Figure 5 - The use of the gamified program “Kahoot!” for learning English



Source: author's elaboration based on the information from the “Kahoot!” program

With the help of this program, students can not only improve their speaking, reading, and writing skills but also gain other knowledge that will be useful in fields such as music and creativity. The Bubbles game was also used for the third week of training. In the fourth week of study, students were offered the use of the following musical compositions: “BLACKPINK – ‘Ice Cream’, ‘Lovesick Girls’, ‘The Weekend – ‘Starboy’, ‘Blinding Lights’, ‘Can’t Feel My Face’” (Appendix 1). These songs were chosen precisely because of the large amount of various phrasal words and idioms, which are essential to learn for the English language. Also, these songs were selected because they are popular among young people and

can interest students to be active during the educational process. Also in the fourth week of study, students had the opportunity to use the gamified program Factile and Bubbles in the process. This academic program was conducted with students in English classes by their teachers, under the supervision of the research team. Students only needed internet access and a mobile device to study using this program, as all programs can be used on any device.

After completing this training program, students had to take a repeated post-test, which aimed to determine changes in the development of listening, writing, and speaking skills after training with the additional method (Appendix 1). The structure of this test consisted of three parts, similar to the previous one, which included writing, listening, and speaking. In addition to the test, the students were given one of the speaking exercises, for which they had to discuss one of the given topics with their teacher. Also, after the testing for the students, a focus group discussion was held, which aimed to determine the students' opinions, attitudes, and feelings after completing the educational program with elements of gamification and musical format. Also, an essential aspect of this discussion was the motivational aspect, since this discussion also aimed to determine whether there were changes in the motivational aspect of students after completing the educational program. The debate took place in an oral format.

Statistical processing

All obtained data were calculated using statistical functions in the Excel program. Graphs and charts of the results were also created using built-in Excel functions.

Research limitations

One of the limitations of this study is the relatively small sample of students as research participants. A wider sample, in particular from different educational institutions, can provide more extensive and detailed results. Additionally, one of the limitations

is the relatively short duration of the training program. A longer duration of the program, for example, within 6 months, can give more precise and detailed results regarding the motivation of students and their success.

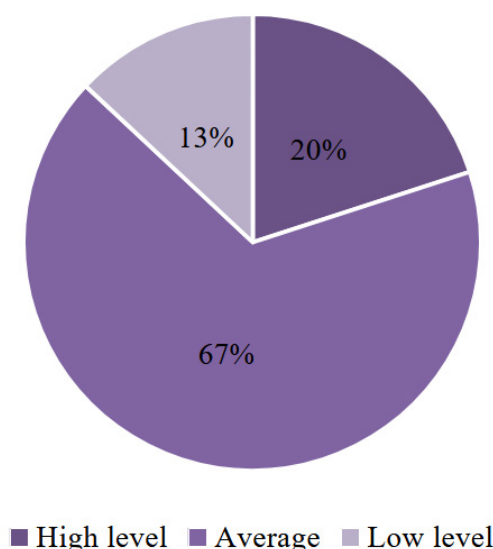
Ethical issues

All participants in this study provided their written consent to participate. All participants were informed about the purpose of the study, its procedure, and its tasks. The ethics committee of the Nanjing Foreign Language School approved the training program.

Results

At the beginning of the study, students were tested to determine their level of English language proficiency. The results are below (Figure 6):

Figure 6 - Results of preliminary testing of students

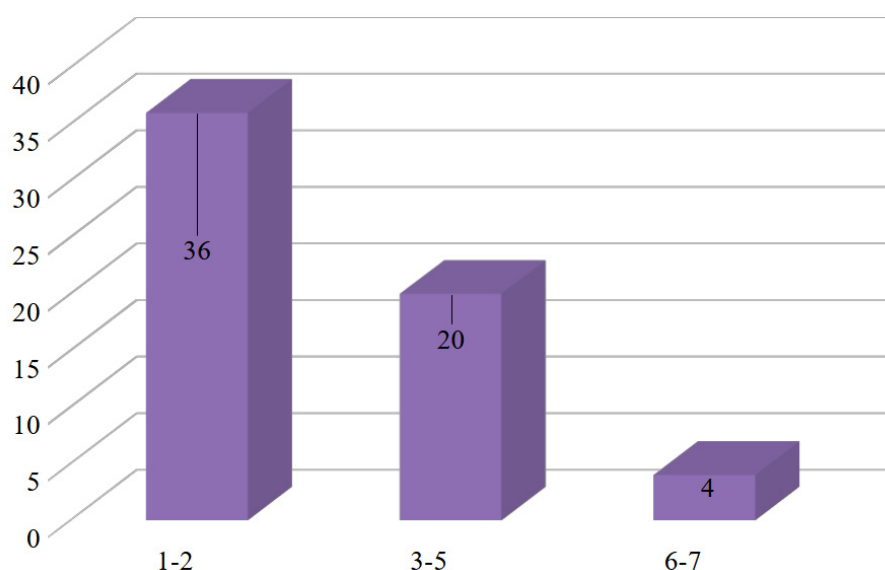


Source: elaborated by the author

From the results above, it can be seen that after the pre-test, the students have the following levels of English proficiency: 12 students (20%) have a high level, 40 students (67%) have an average

level, and eight students (13%) have a low level. After the pre-test, students also participated in an oral discussion in a focus group, which aimed to determine students' attitudes toward learning with elements of gamification and elements of a musical format for learning English. The results of the discussion can be seen below (Figure 7):

Figure 7 - The results of the discussion in the focus group



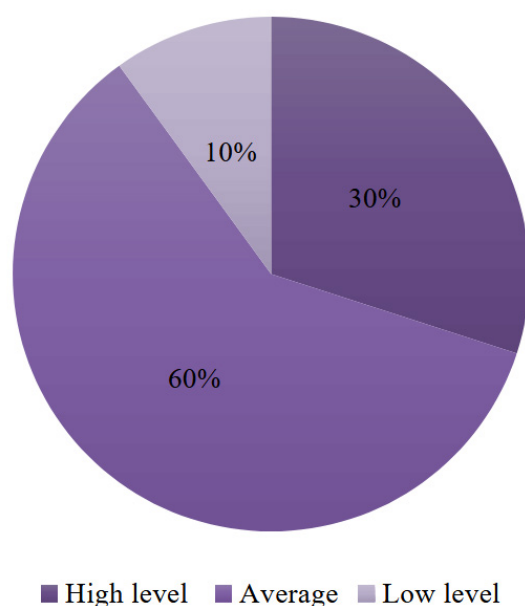
Source: elaborated by the author

The results showed that the level of motivation of the majority of pupils was low. Specifically, 36 students (60%) fell into the 1–2 range, indicating a poor level of interest during educational classes and a complex psycho-emotional milieu for pupils. Only four students (7%) fell into the 6–7 range, showing comparatively fewer issues with motivation, while another 20 students (33%) fell into the 3–5 range, indicating a low-to-moderate desire to attend classes. This distribution was not uniform, as demonstrated by a chi-square test with a substantial effect size (Cramer's $V = 0.48$), $\chi^2 = 27.20$, $p < .001$. Students stressed that they spent a lot of time learning new words using traditional methods, which they considered unmotivating, and that the constant emphasis on memorizing isolated words and grammar rules significantly affected their interest and desire to attend courses.

Furthermore, according to the findings of the focus group discussion, 25 students (41%) believed that studying English would benefit from incorporating innovations such as gamification and music, whereas 35 students (59%) were either dubious or unsure. A binomial test found that this difference was not statistically significant ($p = .18$), with a tiny effect size (Cohen's $g = 0.16$), suggesting that opinions were divided rather than strongly polarized. Students made it clear that they wanted their classrooms to use more creative and participatory teaching strategies, including the use of digital resources. Concerns were expressed, meanwhile, regarding the usage of antiquated music, which they felt would be unattractive. Nevertheless, as these approaches are relatively new in their educational background, many expressed their interest in trying them.

The next step was the completion of a special educational program using the combined method of music and gamification elements. After completing the program, the students were retested on the level of English language proficiency. The results are below (Figure 8):

Figure 8 - Test results after completing the training program



Source: elaborated by the author

From the results given above, it can be seen that there are more students with a high level of English proficiency; in particular, their number has increased to 18 (after the previous test, there were 12), which is 30%. In particular, it was noticed from the results of the post-test that the students' listening skills improved, they were able to cope with the task faster, and they listened to the video material only once. Also, students' vocabulary improved, and the number of grammatical errors decreased. There were 36 (60%) middle-level students; after preliminary testing, the number increased to 40 students. This means that a certain number of students moved to a higher level after completing a special program. There were six students with a low level, which is 10% (after the preliminary testing, there were 8). It also means that a certain number of students have moved on to higher levels.

Table 1 shows the comparison of the proficiency levels before and after the test. There was a 10% improvement in the percentage of students at the high level of competence, going from 12 (20%) to 18 (30%). This rise had a small to medium effect size (Cohen's $g = 0.25$) and was statistically significant ($p = 0.041$), according to McNemar's test. This outcome indicates that after completing the program, a substantial proportion of students were able to move into the high proficiency category.

Table 1 - Comparison of Pre-test and Post-test English Proficiency Levels (N = 60)

Proficiency Level	Pre-test n (%)	Post-test n (%)	Change	p-value (McNemar's)	Effect size (Cohen's g)
High	12 (20%)	18 (30%)	+10%	.041*	0.25 (small-medium)
Average	40 (67%)	36 (60%)	-7%	.083 (ns)	0.18 (small)
Low	8 (13%)	6 (10%)	-3%	.317 (ns)	0.10 (small)

Source: elaborated by the author

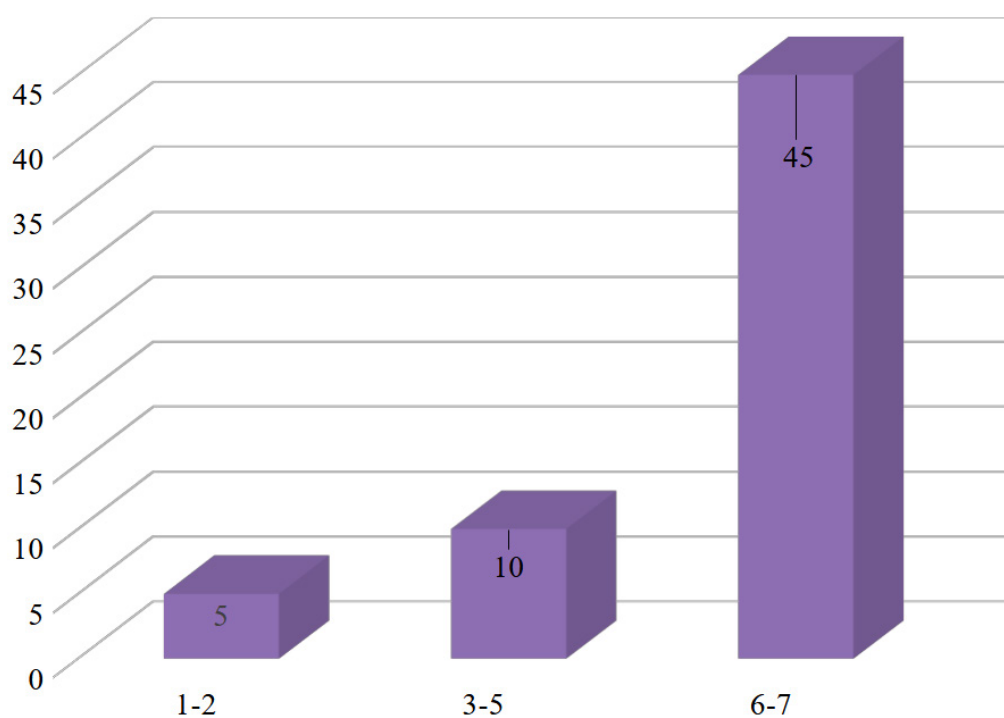
In comparison, the percentage of students who were proficient at the average level dropped from 40 (67%) to 36 (60%). Even though this decrease implies that some students advanced to a

higher category, the change had a small effect size ($g = 0.18$), falling short of statistical significance ($p = 0.083$). Likewise, the percentage of pupils at the low proficiency level decreased from 8 (13%) to 6 (10%), but this change had a negligible impact ($g = 0.10$) and was not statistically significant ($p = .317$).

These results, summarized in Table 1, indicate that the music and gamification program was most effective in encouraging upward migration into the high proficiency category. However, improvements in the average and low groups were less noticeable and did not reach statistical significance.

After re-testing, students again participated in a focus discussion, which aimed to determine their attitudes toward learning with the proposed method and assess any changes in motivation after completing the program. The results are presented below (Figure 9):

Figure 9 - The results of the focus group discussion after completing the training program



Source: elaborated by the author

The results show that the level of motivation among students has increased significantly. In particular, 45 students fell within the 6-7 range on the motivation scale, 10 students moved to the 3-5 range, and only five students were in the 1-2 range. This indicates that the use of gamified programs and elements in the educational process contributes to increasing the motivation of students and their involvement in the educational process. Students emphasized that their desire to learn English with the help of such programs increased, and they would like to attend classes using this method of learning more often. After completing the training program, students changed their opinion about the use of gamification elements and music format in the process of learning English. In particular, 53 students (88%) expressed their admiration and positive emotions after completing the training program. The students noted that the tasks were particularly interesting and exciting. The students liked the Factile program the most, where they could play in teams and earn points. Students also noted that using the programs was effortless. Students also reported that learning new words with the apps was easy, especially when it was done in a video game format. Some students did not like using these programs; namely, seven students (12%) emphasized that they did not feel much relief in learning English.

These changes were significant, as indicated by a statistical analysis of motivation distributions before and after the program. With a substantial effect size (Cohen's $g = 0.71$), McNemar's test showed a significant upward trend in the high-motivation group ($p < .001$). Likewise, the decreases in the low- and moderate-motivation groups had medium-to-large effects and were statistically significant ($p < .001$ for low, $p < .05$ for moderate). These findings provide solid evidence that the implementation of gamification and music-based approaches has significantly increased students' interest and engagement in learning English.

Discussion

The integration of gamification of learning, in particular in the process of learning English, began to take place relatively recently in the global education system. A large number of studies conducted on this topic indicate the positive effects of integrating gamification and music formats for learning English. An increase in motivation occurs in students when they feel comfortable in the environment and can freely express their thoughts and be in a stable psycho-emotional state without stress (Pintrich and de Groot, 1990). Elements of gamification in the process of language learning provide students with a calm environment, freedom of expression, and a comfortable stay in the classroom during the lesson. The results of the study showed that elements of gamification, namely rewards, badges, and points, stimulate students to be active in the learning process and increase their overall motivation and desire to attend classes. Also, the results demonstrated that the atmosphere and stay at the classes became more pleasant and enjoyable for students, which indicates the positive factors of the integration of such elements for language learning (Anisa et al., 2020).

The implementation of gamification in education also benefits the development of various necessary skills for language learning, such as listening, speaking, writing, and others. With the help of such methods, students not only increase their motivation but also constantly develop skills for communication and cooperation with classmates (Huseinović, 2024). The implementation of gamification positively impacts student achievement by directly influencing student motivation. Since the student has a desire to attend classes and study, the success and effectiveness of studies increase (Singh and Harun, 2016). Currently, there are many gamified programs for learning English. One such well-known and popular program is Kahoot!, a gamified platform. The results of the study emphasize that students positively perceive work with this program and receive positive emotions from it.

While playing in this program, students can learn a foreign language with ease and interest (Linh et al., 2020). In particular, students liked working with this program because they could work in a team, which significantly increased their involvement in the learning process and their desire to work together with classmates. In addition to team games, there are also individual games where students can compete for rewards; thus, there is adequate competition, allowing everyone to prove themselves and not be afraid to answer questions (Vathanalaoha, 2022).

The gamification process can also be accompanied by a musical learning format, which makes the learning process even more effective and engaging for students. The results of the study indicate that the use of music in the process of language learning can significantly reduce tension and anxiety during classes, as well as increase student success (Li et al., 2022). When using musical compositions, students feel more comfortable and can freely learn the necessary words to expand their vocabulary. Improving vocabulary knowledge is also explained by the fact that usually songwriters are native speakers, so their pronunciation can have a positive effect on improving students' accents and listening skills (Tamtama et al., 2020). A significant advantage of using the musical format in education is also the convenience and accessibility of this method. Students can listen to their favorite music anywhere and anytime. Thus, by listening to music for an extended period, they remember words from a foreign language and can use them in classes at school. Gamified programs are also an affordable resource for learning a foreign language. In particular, most such programs are available in a free format, which is highly convenient for students. Additionally, these programs are designed to be used on mobile devices, allowing students to access them at a time convenient for them, as well as in classes if necessary (Inayati and Waloyo, 2022; Wang, 2023).

The small sample size of our study limits generalizability. Aldalur and Perez (2023) have a similar issue. Although they defined the 41 students they included as "an important and

representative number,” they also admitted that the results might not be broadly applicable and urged more extensive research. Another example of how even larger studies might face sampling and comparability issues is Vathanalaoha (2022), which used more than 500 participants overall but was nevertheless constrained by different group sizes and confounding variables between the control and experimental groups.

Conclusions

The results of the study showed the positive effects of using gamification and music formats for learning. In particular, the results of the preliminary test showed that the students’ English proficiency levels were as follows: 12 students (20%) had a high level, 40 students (67%) had an average level, and eight students (13%) had a low level. After completing the program, the results showed a significant increase in the number of 18 students (after the previous test, there were 12), which is 30%. There were 36 (60%) middle-level students, and six students with a low level, which is 10%. The results of the discussion in the focus group before the start of the training program indicate that 25 students (41%) believe that learning with innovations such as elements of gamification and music is a positive factor for learning English. Also, 35 students (58%) do not believe that learning with the help of music can be enjoyable and exciting for them. The results for the program also showed that the majority of students had a low level of motivation (36 students in the 1-2 range on the motivation scale). After completing the training program, the results showed changes in the students’ motivation and attitude. In particular, 53 students (88%) expressed their admiration and positive feelings after completing the training program. The level of student motivation has increased significantly (45 students in the range of 6-7 on the scale), which indicates that the use of gamified programs and elements in the educational process contributes to increasing student motivation and involvement. The practical value of this study lies in the possibility of integrating this curriculum into the

English language learning process. Educational institutions can utilize this technique to enhance the success and effectiveness of students in learning English. Also, the use of this program can contribute to increasing students' motivation, which is an extremely important factor for the success of language learning. The scientific value of this study lies in the expansion of knowledge about the use of digital platforms with elements of gamification, as well as music in the process of learning English. Additionally, the scientific value lies in the expansion of knowledge about how technology and music can impact the effectiveness of learning and student motivation. Further work in this field can investigate in more detail which language learning processes are affected by the use of gamification and music.

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Appendix 1

Online questionnaires for the pre and post testing

Preliminary English language proficiency testing: <https://forms.gle/9jSjMvz7oGnLVYS3A>

Post-test for students: <https://forms.gle/Srcx8RRyU1Ry2yHw8>

Responsible for the approval of the text

Gengchen Liu

Authorship contribution

Jiandan Hu: Conceptualization; Software; Formal analysis; Supervision Visualization; Project administration; Writing - review & editing. Gengchen Liu: Methodology; Data curation; Funding acquisition; Resources; Investigation; Validation; Writing - original draft.

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The study was conducted in accordance with the ethical principles approved by the Ethics Committee of H.S. Skovoroda Kharkiv National Pedagogical University (Protocol No 32403 of 11.09.2023).

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