Effect of Web 2.0 Gamification Tools on Listening Comprehension Skills in a Second Foreign Language German Course

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Abstract

The purpose of this study is to investigate how gamification using Web 2.0 tools affects secondary school students' listening comprehension skills on a German second language course. The sub-purposes are to investigate the study's outputs, such as course interest and academic motivation. The design of the study was action research, which is one of the recognized methods of qualitative research. The participants of the study were 34 ninth-grade high school students (15 males, 19 females) aged 14 or 15 years old enrolled to a state-project school. Focus group interviews, both student and teachers' reflective journals, and an academic achievement test were utilized to assess the participant students' listening comprehension skills, and formed the data collection tools used to obtain detailed information about the research process. According to the findings of the study, the use of Web 2.0 tools enabled by way of the gamification method helped capture the students' attention and strengthen the steps taken to improve their language learning skills. Although the students' learning styles varied, one point of commonality was their use of gamification.

Keywords

Gamification; Web 2.0; Action Research; German Teaching; Listening Comprehension Skills

I. Introduction

It is widely believed that learners experience feelings of tension, fear, and worries over potential failure when the term foreign language learning is mentioned. The use of inappropriate teaching and learning systems as well as the prejudices held against things unknown as a human emotion or an area that cannot easily be mastered and requires significant effort, both prolong and force people into a hapless cycle when it comes to foreign language learning. Whilst it is clear that educational institutions where foreign language teachers have worked can differ considerably (Işık, 2008), the problems and challenges they will have faced in teaching foreign languages are well known. The difficulties encountered in second foreign language learning and teaching may also be similar to that experienced in first foreign language learning. It should not be forgotten, however, that language is a holistic learning area.

Difficulties experienced in the teaching and learning of a second foreign language are often related to factors other than the teaching system itself, the administration, or even the curriculum (Can & Işık Can, 2014). These factors include individual, social, legal, pedagogical, administrative, and cultural considerations. Furthermore, while even native German language speakers can struggle with certain rules and situations, it can be predicted that those learning German as a foreign language face additional stress. At the same time, differences in German pronunciation can lead to an aversion to learning the language, and the difficulties in German language pronunciation may instill prejudices in language learning students. As a result, efforts have been made to identify the most effective practices for the successful teaching of basic German language skills, and one of the more widely accepted models has been the holistic approach.

The holistic competence model of the Common European Framework of Reference for Languages (Council of Europe, 2001) indicates that all four basic language learning skills must be addressed; with listening, speaking, reading, and writing being the four fundamentals. In multilingual Europe, uniform standards for these abilities have been established. Understanding what is being listened to is the most fundamental of these skills, because people need to understand what they are listening to as it forms the groundwork for the most basic of live communication skills, namely speaking. According to the Common European Framework of Reference for Languages (Council of Europe, 2001), the initial level of A1 in language learning is specified for learners who encounter the German language for the first time, and the level at which learners undertake the most basic level of language interaction. At this level, learners should be able to understand and use familiar everyday expressions, as well as very basic phrases aimed at the satisfaction of basic concrete needs (Council of Europe, 2001). The most basic requirement for this simple interaction is the ability to hear and understand sounds correctly.

It is critical to remember that learning a foreign language serves as a cultural bridge, with communication between humans of different societies being one of the foremost important outcomes. In order to make the best use of this communication tool, we come across the concept of gamification, which has become very popular in recent years. Although the playing of games may have been the starting point, gamification is quite different. Yılmaz (2017) distinguishes between game and gamification by using the terms "game" and "play." While "play" refers to freely played games with no borders or rules, the term "game" refers to pastimes played according to certain set rules, and with predetermined goals. Based on these definitions, gamification can be described as a goal-oriented, entertaining form of work.

Today's students are tested with more lessons and topics every day, which diminishes their natural interest in learning new languages. However, gamification can be used as an effective method to both reduce student stress and help make a new target language interesting and permanent. It is important to emphasize here that games used in the teaching of foreign languages are primarily aimed at increasing the effectiveness of the teaching process, as well as to achieve permanence of

the acquired language skills. According to Donmuş and Gürol's (2015) study on the use of educational computer games in language learning, games can help with students' learning retention as well as increasing their motivation to learn. Given these benefits, the use of educational games in foreign language teaching is on the rise because they help to relieve the monotony of classroom-based teaching. Web 2.0 tools can be easily included in the education process of gamification within the modern-day school environment. These tools can assist teachers to more easily manage the education-teaching process, whilst also attracting and maintaining the attention of students to the lessons.

a. Gamification in foreign language teaching

Learning a foreign language is a very important but also a complex process in today's world, where simply "knowing a language" is no longer considered enough. Furthermore, because of the multifaceted nature and role of modern languages, the motivation of students to learn a second language can also be particularly complex, and is considered unique within motivational psychology (Dörnyei, 1998). Despite the mother tongue having been learned through exposure from childhood, some students still struggle with literacy lessons in school. In such cases, negative conditioning develops while learning the mother tongue, which can then be transferred to the learning of any foreign language. This process is repeated with each new language learning experience. Students who encounter a foreign language in primary school have often struggled to learn the language, owing both to their teachers lack of expertize in the field as well as the students' psychological unpreparedness to learn. One of the most effective ways to break through their negative prejudice is through the playing of games in learning.

To begin with, gamification and educational practices should be examined, keeping in mind that gamification is not a learning method, but rather an approach to making learning more appealing as part of the educational process (Bozkurt & Genç-Kumtepe, 2014). Gamification is the application of game design techniques, game thinking, and game mechanics to non-game contexts (Marczewski, 2013). Given that play forms an important part of life, for both children and adults, and despite the fact that the concept of gamification emerged in non-educational fields, time will no doubt show that gamification will become one of the most significant changes to occur in the field of education. Some argue that gamification will transform information technologies such as social networks (Xu, 2012), and gamification is quickly becoming a phenomenon in the field of educational information technology (Xu, 2012). In addition, even though gamification is still considered a new, albeit increasingly popular method, the limited number of studies in the field of education have generally reported positive results in processes that have included gamification in teaching methods (Özkan & Samur, 2017).

In recent years, gamification has gained traction in the educational community as a means of changing classrooms and learning structures to meet the needs of second language learners, thanks to digital technologies. A review of qualitative studies on gamification in education by Bai et al. (2020) found that students had four main positive reactions to gamified learning: enthusiasm, feedback, recognition, and clear goals. However, some students also reported negative reactions, such as a perceived lack of utility and feelings of anxiety or jealousy. While educators have traditionally sought novel ways to incorporate game-based learning, there is a lack of research-based evidence surrounding gamification as a teaching strategy in K-12 education. Learning technologies have transformed how we teach and learn, particularly in the context of second language acquisition, and games and other interactive activities can help students learn a foreign language more effectively by making learning more engaging and motivating (Idris et al., 2020). Games have been viewed as a platform for learners to improve their knowledge while also allowing them to become self-directed learners of knowledge (Wen & Aziz, 2022). The literature on

gamification in foreign language teaching indicates positive results on learning (Ahmed et al., 2022; Bal, 2019; Dehghanzadeh et al., 2021; Franciosi, 2017; Lam et al., 2018; Sailer & Homner, 2020; Wichadee & Pattanapichet, 2018; Yang et al., 2020), as well as motivation and engagement (Chiang, 2020; Dehghanzadeh et al., 2021; Fadhli et al., 2020; Kaban, 2021; Wichadee & Pattanapichet, 2018). However, the majority of these studies focus on teaching vocabulary through games. Given that this study examines listening comprehension skills on a German second language course, it adds to the existing literature.

b. Web 2.0 tools in foreign language teaching

Information is no longer a finished and packaged product; it is a living thing (Turkish Ministry of National Education [MoNE], 2018). It is important to remember, therefore, that it constantly changes, develops, and is put into practice by learners. As such, it is necessary to adapt information to the changing skills of the 21st century. In Turkey, policies have been put in place to develop the four fundamental skills of foreign language teaching. All digital content should be created in the context of themes that promote the holistic development of students' listening, speaking, reading, and writing language skills (MoNE, 2018). Students should have access to digital environments where they can communicate in their native language and participate in online writing and discussion activities (MoNE, 2018). Delivering these four fundamental skills to students via digital tools necessitates speaking in the target language. However, since it is difficult to transport students to environments where the target language is spoken, Web 2.0 tools make this achievable in the simplest way possible through virtual means.

Language learning, as stated by Balbay and Erkan (2018), is more than just a classroom experience. Exposing learners to different and continuous forms of interaction supports their learning, helping both students and teachers to evaluate the overall teaching and learning process in the most effective way. Web 2.0 tools facilitate the acquisition of 21st century abilities such as production, depth, and engagement in language acquisition, as well as through learning by doing. Whilst courses that meet the four basic skills areas in foreign language instruction can be difficult to prepare, the advent of Web 2.0 technologies can assist teachers in designing more effective instruction in order to teach those skills. As today's new technologies enable online communication and information exchange, students can be empowered through the creation of an enhanced social learning environment (Balbay & Erkan, 2018). With a technologically supported teaching process that is considered both easier and different, it is much easier to both attract and maintain students' attention to language learning classes.

Considering the potential of gamification and Web 2.0 technologies in teaching German, the purpose of the current study is to look at how gamification using Web 2.0 tools affects secondary school students' listening comprehension skills on a German second language course. The sub-purposes of the study are to investigate the output of the research, such as course interest and academic motivation. Therefore, the current study was guided by the following research question: "How do gamification processes enhanced with Web 2.0 tools affect secondary school students' listening comprehension skills on a German second language course?"

II. Methods

This study used action research, one of the established qualitative research designs. Action research is a method used to solve problems related to the application process carried out by a practitioner themselves or in collaboration with a researcher (Beyhan, 2013). The action research

design aims to determine the measures that need to be taken in order to improve a situation, and is based upon conducting a critical evaluation of the existing practice, with the participation of practitioners and those affected by the problem (Aksoy, 2003). The goals of action research are to take a direct approach to concrete social problems, to transform research findings into practice during the research process, and to achieve equality between the researcher and the affected parties (Mayring, 2020). This type of research employs a variety of techniques and approaches, such as experimental designs, systematic observation, descriptive research, and case studies. For the current study, it is a process by which the participants (teachers and education administrators) carefully review their own educational practices using recognized research techniques (Ferrance, 2000). Action research was found to be appropriate in this study because the researcher participated as both guide and practitioner. Individual action research was chosen as the most appropriate form of action research, as the study conducted by a teacher to investigate a problem in their classroom.

a. Study Group

The participants of the study were 34 ninth-grade high school students (15 males, 19 females) aged 14 to 15 years old enrolled to a state-project school. Of the 34 participant students, five had previously received German language lessons, while the remaining 29 had not. The socioeconomic status of the students was found to be comparable, and the students' academic profile being similar as they were accepted to the school based on a common entrance exam. In schools deemed appropriate by the board, compulsory first and second foreign language courses are offered as a continuation of the primary education foreign language curriculum. Furthermore, elective foreign language courses can be also be included to supplement mandatory foreign language courses.

	New Learners	Pre-learners	Females	Males
9/F	29	5	19	15

Table 1. Students participating in the research and German pre-learning numbers

The study was conducted at a state-project school that employs an entrance exam to determine placement. The school has 760 students, a teaching staff compliment of 60, and has 26 classrooms, each of which are fitted with a smartboard. A gym, music room, conference hall, female student dormitory, as well as a cafeteria and canteen are also available. The participant students shared a similar socioeconomic background. Almost all of the participant students experienced no issues in accessing the necessary technological equipment. According to the high school placement exam scores, the school creates a successful profile. At the school, English is taught as the primary foreign language, with German offered as a second foreign language.

b. Action Plan Implementation Process

In action research, data collection is performed in a systematic manner, and both qualitative and quantitative data collection techniques can be utilized (Şimşek & Yıldırım, 2013). As a result, the researchers have the option of using the research technique they deem most appropriate or incorporating new research techniques into the process at points where the research questions are otherwise not being adequately answered. Data diversity is attempted in action research through the collecting of data from different points in times and place in the process that is mutually supportive.

The study lasted 6 weeks in total, during which selected studies were applied in accordance with the unit topic using Web 2.0 tools, and an achievement test was administered at the end of the sixth week. Each week, the participant students and their teacher maintained journals in order to see if their listening comprehension skills improved. The interviews took the form of focus group discussions, and both video and audio recordings were made during the implementation.

Avatars for each participant student were created, and various tasks were added to the instructional system being used. The instructor and students worked together in determining the rules and tasks for each game. The players (students) earned points based on how well they completed each of the tasks, and advanced in the class ranking accordingly as a result. In other words, the most fundamental steps of gamification were implemented such as the use of a leaderboard, awards to could be won, and the creation of avatars for players.

During the COVID-19 pandemic, school education in Turkey was mostly conducted via distance learning, utilizing a variety of Web 2.0 tools (e.g., Classcraft, Duolingo, Edpuzzle, and Lyricstraining). Education was conducted in Turkey using the Education Information Network (known by its Turkish acronym, EBA), which was developed and managed by the Turkish Ministry of National Education. Table 2 contains information about the implementation process applied in the current study.

	EBA	Duolingo	Edpuzzle	Lyricstraining	Classcraft
Week 1	Pretest	To inform	To inform	To inform	Usage information; Creation of students' avatars
Week 2	Click tracking of Edpuzzle, Lyricstraining videos	Level 1	Studying videos prepared with Edpuzzle	Designated video; Working with Lyricstraining	EBA student data; Processing Duolingo level screenshots in Classcraft
Week 3	Tracking student	Level 2	New video	New video	Processing information in Classcraft
Week 4	Tracking student	Level 3	New video	New video	Processing information in Classcraft
Week 5	Tracking student	Level 4	New video	New video	Processing information in Classcraft
Week 6	Posttest	-	-	-	Sharing of the leaderboard

Table 2. Application process

c. Researcher's Role

The researcher in the current study was also the German language teacher of the class, and had been teaching German for 8 years prior to the study. The researcher administered a listening skill

achievement test to the target group at the beginning and at the end of the implementation process. During the process, the researcher/teacher prepared videos using Edpuzzle and Lyricstraining which aimed at improving the students' listening comprehension skills. Additionally, the researcher processed the students' work and operations in Classcraft, tracked the students' progress using the Duolingo tool, and recorded every action undertaken in Classcraft. Simultaneously, appropriate environments were created in order to encourage the spontaneity and preserve the reality of the students' answers to interview questions and through their journals. Therefore, it may be stated that in practice, the researcher served as both a guide and the class instructor.

d. Data Collection Tools

Focus group interviews, both student and teachers' reflective journals, and an academic achievement test used to assess the participant students' listening comprehension skills were utilized as data collection tools in order to obtain detailed information about the research process during the problem-solving phase. Focus group interviews were defined by Casey and Krueger (1994) as a carefully planned discussion in an environment where individuals can freely express their thoughts. The purpose of the focus group interviews was to learn about the students' experiences and what they had learned over the 6-week duration of the study.

Questions were posed in order to assess the student participants' feelings, thoughts, and achievements. The researcher designed a set of 20 interview questions to elicit the most pertinent information from the students' feelings and thoughts. During the preparation of these questions, expert opinion in the teaching of the German language was sought, and corrections applied to the interview questions where deemed appropriate. The interview questions were designed to learn about the students' experiences in learning German, and their perspectives on the German language. The students' perspectives and prior gaming experience, use of games in education, and of gamification were then elicited. Later, the participants were asked about their experiences in using Web 2.0 tools, with the main questions focused on the functionality of the tools used in the process, their effect on the students as learners, and the changes seen in their learning at the conclusion of the study.

Each week, the participant students maintained reflective journals in order that the researcher could examine the students' feelings and thoughts regarding the study process, their evaluation of the method employed, and their comments on the functions of the tools used. The students reflected their developing thoughts about the process on a weekly basis throughout the study. In addition, the teacher also maintained a reflective journal to record the feelings and thoughts of the researcher, as well as their observations throughout the implementation process.

At the beginning of the application process, a 15-question academic achievement test was applied in order to assess the participant students' prior level of German language listening comprehension skills. Achievement tests are used to assess an individual's knowledge, skills, and understanding of a subject prior to, and/or at the conclusion of a course of study. The test used in the current study was developed by the researcher to assess the students' pre- and post-study academic achievement. Subjects covering the first and second units of the course were chosen as the subject area based on the Turkish Ministry of National Education's German language curriculum detailed in the annual plan, whilst also paying attention to the achievement level of the students. Selected listening texts were chosen from sample books, or samples of dialogue created as mp3 files. Following the preparation of the academic achievement test, expert opinion was sought and any necessary corrections or arrangements made prior to the test's application. One high school German language teacher and a faculty member from the university's German language education department were also consulted for their expert opinion. At the end of the process, it was also

aimed to assess the study's overall effectiveness by re-administering the same test.

e. Data Collection Process

The study was conducted as an action research with both qualitative and quantitative data collection techniques in the research design. The 6-week study was conducted during the 2020/2021 academic year. The first week of the study was used for process preparation and pre-testing, whilst the final week was used for process evaluation and post-testing. For the middle 4 weeks of the study period, the listening comprehension skills of the participant students were developed and assessed using Web 2.0 tools, and the results scored by way of a gamification tool.

From the class of high school students, 11 students volunteered to participate in the focus group interview. The interview lasted for 1.5 hours and was completed in four separate sessions conducted in a row online. Each participant was afforded adequate time to express themselves clearly.

The academic achievement test applied in the study was a multiple-choice exam based on the implemented German teaching curriculum in force. The test was not issued to the students prior to the start of the lesson, and the test's length of time being sharing was determined as 40 minutes. The test was administered using an online environment, and the participant students sat the test synchronously. For each question, a separate dialogue was played, and the students were then asked multiple-choice questions based on the dialogue. The listening texts were played twice, and after the test, the texts that the students wanted to hear again were replayed. The test was completed by the participant students during a 1-class-hour session, and students were blocked from answering questions beyond the exam time limit with the sharing period having expired.

Student reflective journals were collected at the end of each week's activities. One volunteer student was chosen to collect the journals and send them to the teacher via e-mail once a week. There was no restriction placed on students' ability to make objective comments in the journals. At the end of each week's process, the teacher separately recorded the work and transactions, feelings, and thoughts in their own reflective journal.

f. Data Analysis

The study used both quantitative and qualitative data to examine and assess the academic success changes in the German language listening comprehension skills of secondary school ninth-grade students studying German as a second foreign language. Additionally, student motivation and class participation was also examined using the gamification method supported by Web 2.0 tools. The results of an academic achievement test, administered both as a pretest and posttest, yielded the quantitative data of the study, whilst focus group interviews, student reflective journals, and a teacher's reflective journal were used to collect the study's qualitative data.

Each qualitative data source was coded using the content analysis technique, and was supported with the inclusion of direct quotations in the reporting the findings of the collected qualitative data. The data was analyzed using an inductive approach. The data in written form was coded in the margins to describe all aspects of the content to begin the analysis process. Each code is named with content-specific words. The information gleaned from the content analysis was organized and interpreted into various categories and themes, with quotations taken from the students' sentences backing-up the content analysis statements. Following completion of the coding procedure, the codes were clustered into categories that captured the essence of the data (Saldana, 2021). Categories with similar events and incidents are classified as themes. The impacts of the action study intervention designed around German language teaching with the aid of gamification and

Web 2.0 tools, as well as the views of the participants about the intervention process, were illustrated based on the codes that emerged during the data analysis procedure. An external reviewer was used for the purposes of assuring inter-rater reliability for the coding procedure, with help sought from a professor in the field of educational sciences who is experienced in coding and analyzing qualitative data. The external reviewer and the researcher met in order to ensure that the purpose of the research, the implementation process of the action plan, the coding procedure used, and a fundamental understanding of the phenomena under study were all commonly understood.

IBM's SPSS program was used to interpret the collected pretest and posttest data on academic achievement. As there were data from 25 participants, the Shapiro-Wilk test was used in order to see if the normality assumption had been met with both the pretest and posttest data. A significance value (sig.) greater than .05 in the context of the test in question indicates a normal distribution (Demir et al., 2016). However, as the sample size in the current study was limited to 25, the normality of the data was first assessed based on the Shapiro-Wilk results. When we look at the data from this page, the p values (pretest = .163 / posttest = .138) show a trend that is greater than .05 (p > .05). As a result, we can conclude that the distribution of the collected data does not differ significantly from that of a normal distribution. When we look at the skewness and kurtosis values of the tests, it can be seen that they range from -2.0 to +2.0 (George & Mallery, 2010), implying that the data is normally distributed. The obtained data was found to have a skewness value for the pretest of -1.3, the kurtosis was 1.0, and the skewness for the posttest was 0.8. As a result, the collected data may be said to be normally distributed since the values fall between the -2.0 to +2.0 range. When the Q-Q graphs are examined, it can be seen that the collected data were clustered around a direction, which also indicates a normal distribution. According to the data presented in the histogram graphs, the mean value of the pretest was 65.16, whilst it was 77.28 in the posttest, which also indicated a normal distribution.

III. Findings

a. Qualitative Findings

The findings from the student focus group interviews, the student reflective journals, and the teacher's reflective journal are organized and presented under subheadings based on the results of the research.
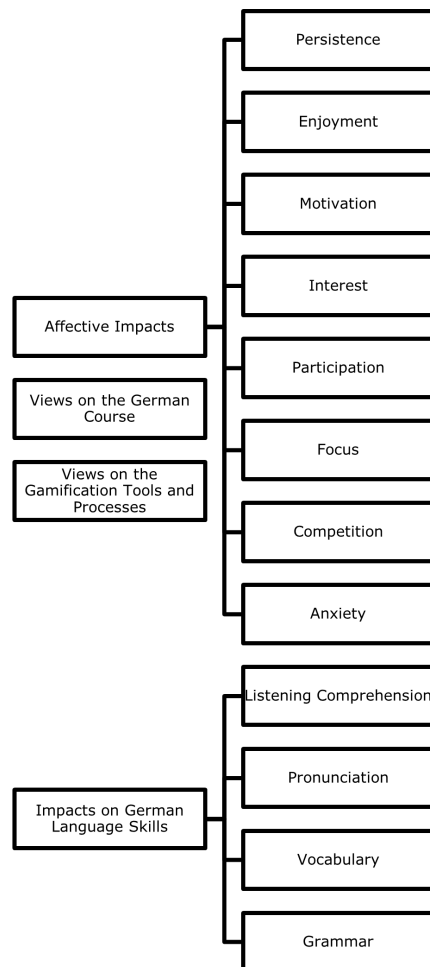
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                              ┌─────────────────────┐
                         ┌────│    Persistence      │
                         │    └─────────────────────┘
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                         ├────│     Enjoyment       │
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                         │    ┌─────────────────────┐
                         ├────│     Motivation      │
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                         │    ┌─────────────────────┐
┌──────────────────┐     ├────│      Interest       │
│ Affective Impacts │────┤    └─────────────────────┘
└──────────────────┘     │    ┌─────────────────────┐
┌──────────────────┐     ├────│    Participation    │
│ Views on the     │     │    └─────────────────────┘
│ German Course    │     │    ┌─────────────────────┐
└──────────────────┘     ├────│       Focus         │
┌──────────────────┐     │    └─────────────────────┘
│ Views on the     │     │    ┌─────────────────────┐
│ Gamification     │     ├────│    Competition      │
│ Tools and        │     │    └─────────────────────┘
│ Processes        │     │    ┌─────────────────────┐
└──────────────────┘     └────│      Anxiety        │
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                         ┌────│Listening Comprehension│
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┌──────────────────┐     ├────│   Pronunciation     │
│ Impacts on German│─────┤    └─────────────────────┘
│ Language Skills  │     │    ┌─────────────────────┐
└──────────────────┘     ├────│     Vocabulary      │
                         │    └─────────────────────┘
                         │    ┌─────────────────────┐
                         └────│      Grammar        │
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Figure. 1. Qualitative Findings

Affective Impacts

Persistence

When the participant students were asked about the lessons taught using the game, many of them stated that the lessons were more memorable. S2, for example, emphasized that a lesson combined with a game is more notable than a lecture, saying that "games are catchier than opening the textbook and studying." As can be deduced from the answers to the question "Would you like German lessons to be taught in this way again?" posed near the end of the interview, the students stated that they wanted to continue learning in this manner because lessons were more memorable. "Yes, I would like it too," said S4, "as it is both fun and memorable." S8 commented about associating effectiveness with the permanence of their learning, and mentioned that homework especially increases permanence; "I would do it this way, too, because it'll provide permanence, and also because you assign students good and fun homework after the lesson."

Enjoyment

According to the results of the student interviews, the game adds an element of entertainment to the lessons, helps to relax the mind, and makes the lesson seem more interesting. They stated how important entertaining lessons are for students and how difficult it is to listen to lectures they perceive as boring. For example, S3 stated that monotonous lessons can be distracting, making learning more difficult: "I get distracted, and then I can't listen to the lesson or anything… With the

game comes a sense of enjoyment." S8 expressed similar thoughts, saying that enjoyment helps them to focus and learn better,

> *When we have lessons with games, it makes it more fun and we are more focused because sometimes we get bored and lose focus and don't understand so much, but when we have games, we are more focused because we have fun. [S8]*

As learning German is a foreign language for the students of the current study, it was compared to previous foreign language courses in a variety of settings and situations. S1 stated that she had not been in such a lesson before and that her current German lessons were more entertaining and seemed to go smoother than other foreign language lessons. S7, for example, expressed her expectation for an enjoyable lesson while commenting about the lessons taught with games, saying that, "It was fun and beautiful; that is, it was more enjoyable than the English lessons, at least." S9 also stated that he found confidence in the lesson taught in this manner, by keeping the German lessons separate from the mathematics lessons he also enjoys, rather than comparing it to other lessons; "After other lessons, especially literature and mathematics, such a non-mathematical lesson can really distract us." S10 also expressed her thoughts on the method, stating that she was bored in classes where she was only a listener and that this process was felt by her to be quite positive, saying that, "Normally, it is very boring for me to learn by just listening, but I thought it was very good, and really quite fun."

Homework can be a challenging task for students. With this application, however, it was observed that the students did their homework more willingly and diligently, and without becoming bored. For example, S4 stated that he had completed the homework without becoming bored: "It's nice to do the fun lessons, the homework given was not boring, so I could do it more comfortably." S10 also expressed that every stage of the lessons was interesting because it resembled a game, and that she enjoyed the activities; "They are more fun because they are styled like a game. I really liked these activities very much."

It was also discovered that the teaching of the lessons in this manner during the time of the COVID-19 pandemic was a factor that helped bind the students to the school and their lessons. As such, the students' interaction with their peers increased, and a new area emerged where they could express their excitement and curiosity. S3 expressed her enthusiasm during this period, saying that "It added a little excitement to what was a boring period." Similarly, S8 stated that he was able to overcome the boring environment created by online lessons a little more with the German lessons taught using games, saying that, "We were a little bored because we already had online lessons at home, but this brought a new element of fun to our lessons." It was discovered that connectors such as memorability, participation in lessons, and motivation were accomplished, in addition to the lively nature of lessons conducted with the game. S11, for example, emphasized that the binding element required for lesson participation should be entertainment, saying that, "If it is fun and made more enjoyable with a game or something, we can encourage students to participate more in the lesson."

Students are naturally encouraged to learn more in lessons that they enjoy. Data collected from the students' reflective journals revealed that they had a lot of fun during the application process. They found the tools used and the course of the study to be very useful and instructive, mentioning that they were more motivated and excited as a result. The entertaining elements for students who stated that they did their homework without becoming bored were the use of songs and the scoring system. Students who believed that learning German in this manner was more enjoyable stated that they were able to fully concentrate on the lessons. This situation can be exemplified with a statement made by S6; "I can generally understand the lesson without becoming bored or sleepy." Furthermore, when students were becoming bored, the Web 2.0 application was used to help alleviate their boredom. They claimed to have used their own tools. The students who stated that

they enjoyed the activities the most said that their interest was piqued at the start of the application process, and that continued right through until the end.

Motivation

According to the participant interviews, many of the students believed that the lessons helped to increase their motivation to play the game, while one student stated that his motivation had not changed. Several students in particular stated that their motivation for the lessons had increased, despite the fact that they were afraid of or did not want to learn German. Students who stated that their willingness to complete the assigned homework increased, mentioned wanting to do the homework and submit it as soon as possible, even if the studies were sometimes difficult or they did not have much spare time. They stated that the most important factor in this change was obtaining the Classcraft points from having completed their homework.

For example, when S11 began in the ninth grade, he stated that he was afraid of learning German, a field he had previously experienced, but felt psychologically more comfortable in that the game had changed their motivation to learn German. On this, S11 stated that; "I was a little afraid of German when I went to the ninth grade; but what can I say, gamification really made it all that little bit more relaxed. It made a difference, you know, it was good." S5, on the other hand, stated that nothing much had changed for him because his learning motivation was already quite good when he was first asked, stating that, "My motivation is the same, normal, it hasn't changed, but otherwise it's good." He also said that both he and his friends wanted to do the homework, making it their goal to increase their level in the class ranking. S5 went on to explain that, as a result of the current educational system, they were already in a race, saying that; "The desire to do more and pass more, to rise more in the ranking, to race more, is normal as a result of the training system, because everyone is in a race anyway, so there is no problem."

Some students were also influenced by the scoring system, stating that they wanted to do more homework for the sake of seeing their score improve, which was perceived as enjoyable. On this, S4 stated, "I need to do more homework, so it becomes fun to do something more towards building that score, earning it, and learning with it." Similarly, S2 said that "I think the feature I like is that it is a source of motivation and we get rewarded for our efforts," and therefore emphasized that the most important feature of the gamification process was that it helped to increase their motivation to learn because of being rewarded for their efforts.

The gamification process not only succeeded in attracting many shy students to participate more in the lessons, but it also increased their motivation to learn. S10, for example, was shy when describing herself, and that making mistakes in lessons was a compelling factor for her. She was quite nervous to start with because she had never encountered the German language before, but she managed to overcome this tension with both the teacher's support and from the gamification process as the learning became less difficult than before. She explained her motivation as follows:

> *I'm a very shy person who is generally afraid of making mistakes, especially in lessons that I have never experienced before. Normally I would have had a hard time attending lessons because I had no prior experience, but you [the teacher] were very understanding and helped to guide us even when we made mistakes. This greatly inspired me. Instead of being afraid of making mistakes, I was able to try and learn what was correct. Because your methods are also games, it really motivated me. I've never been motivated to learn a language like this before, so thank you. [S10]*

S3 stated that she and her friends had become more motivated, and now had a greater desire to learn, saying that, "There is more desire now for us to learn German. As far as I can see, I think everyone finds the course more efficient now." All of these findings point to how effective and important motivation is when students are learning something new, and that it is even the first

trigger for developing a learning goal.

According to the data from the student reflective journals, there was a noticeable shift seen in the students' attitudes, interests, and enthusiasm for the lessons. For example, S24 commented that, "As I see my friends' scores, I try to do my homework in the best way possible," which demonstrated how important the gamification tool's scores were to the students as a motivator for learning. Students who stated that the gamification process helped to increase their desire to study German, stated that the most important factor was not giving up, with S26 commenting that, "I learned that learning a language is not difficult as long as I am willing." The students stated that they tried to do their homework every day and that they found they would do it with enjoyment and more willingly, rather than as an obligation.

The main finding according to data obtained from the teacher's reflective journal, was related to the students' motivation. It was reported that some of the students were hesitant to use Duolingo having had previous experience with it, whereas others were eager to begin using it again. The high performance level of some of the students' friends had an effect on them, and the students' attention was generally more drawn to the lessons. It was observed that the majority of students completed the homework assigned to them with increasing eagerness each week. However, for some students, the number of tasks set was seen as excessive, and they stated that they experienced difficulties in balancing their workload with their other courses.

The opening and closing of face-to-face education in Turkish schools during the pandemic was also seen to lower the students' motivation. However, in this German course, while we were told that homework had been uploaded during the first few weeks of the course, by the fourth week, as "some students did it and sent it immediately, even without saying that the works were shared in the online environment," meaning that the students had gone ahead and completed the homework on their own. There were also students who stated that by the fourth week they had overcome their prior fears about learning German. Some students even stated that they were still singing the songs that they had learned at the end of the study, and a few of them even thanked their teacher them for conducting such a study with their class. The most important factor in ensuring learning continuity has been clearly shown to be student motivation.

Interest

Increasing students' interest in their lessons is one of the most basic requirements of teaching and for knowledge transference. When discussing the effects of the game on the students' interest in the lessons, some of them emphasized that their interest had increased, while others commented that they already had interest in the subject, but that it had notably increased. However, it was also emphasized that the situation can vary from student to student. It was noted in particular that the game used was considered appropriate for the students' age group, and that different applications can be a useful alternative to attract the attention of learners.

S1, for example, stated that the game made lessons much more interesting and that it was deemed appropriate for all age groups, saying, "I think playing games makes lessons more interesting, and the students are more interested, especially in our age group." S3, on the other hand, emphasized that there was a noticeable change in her interest level, and that the fact that she constantly talked to her family about the lessons was evidence of this:

> *My interest has grown significantly, and I am now far more interested in my German lessons. At the time [of the study], I began to talk about my German lessons a lot at home; my mother warned me that a little was okay, but not to talk about German so much. So, I was clearly talking about it [my German lessons] too much at home. I mean, it definitely piqued my interest. [S3]*

Some of the participant students stated that their interest in learning a new language had also

increased as a result of the game. S8 expressed that, "I already had a special interest in our German lessons, but when the game was added my interest and motivation increased even more." Concerning changes in the students' friendship relationships as a result of the game-based teaching, S10 stated that gamification increased her existing interest, and that it had most likely increased the interest of her friends too. "I think they like it, and I think so because I'm more interested in learning languages anyway, but as I said, my own interest has increased." S6, on the other hand, stated that while their friendships may change, the interest of her friends in the lessons will undoubtedly increase, even if only slightly. "I think they might like it more, even if not very much. I think their interest will grow a little."

However, contrary to this situation, some students held opposing views. For example, S2 stated that each method will have a different effect on different students, and that while the use of gaming in the lessons had piqued the interest of some, it may have no effect on others, and that the situation can change only if the student wants it to:

> *The applications mentioned depend on the character structure, now it is impressive whether there is someone or not. Anyway, those who want to learn will do so, of course, but I don't think anyone expects to see any benefit from those who already say they won't do it; and I won't learn. [S2]*

Aside from the general improvement seen in the students' interest levels, it is possible to say that nothing can be taught by force to those who do not want to learn. However, there may be applications that are of interest to all, in that various tools used could appeal to different students' desires.

> *I think it depends on the person. For example, those who like to play games in Classcraft can benefit from Classcraft, while those who like to listen to songs can benefit from Lyricstraining. You know, they each provide benefits in different ways and are such a focal point of attention. [S1]*

According to the data collected from the teacher's reflective journal, the gamification tool was the single most important and effective tool for increasing the students' interest in learning German. While using the tool, the students felt as if they were in a gaming environment. However, in order to maintain the students' high level of interest, they should be under constant supervision of their teacher, and their friends should also participate in the same work.

Aside from the use of online messaging, the students desired feedback during their lessons. As a result, it was decided to ask additional questions about the songs used in the lessons, and the students' interest was refocused as a result. At the conclusion of the study, some of the students expressed joy and gratitude for having been a part of the experiment. Furthermore, the students were particularly enthralled by the gamification tool. However, this same state of over-excitedness may have resulted in them having made mistakes at times. It can be said that the Web 2.0 tools piqued their interest and their curiosity, with many students not having previously seen such an application, and therefore was unique.

The findings showed that the study piqued the students' interest, and they were eager to learn. With the introduction of the gamification tool, the participant students wanted to learn something by sending a message to the group while they were in another class. The teacher noted that "Classcraft piqued the students' interest more than I had anticipated. Many students were able to create their own avatars as soon as their login passwords were sent out." Even students who drew a rather passive profile in lessons were seemingly eager to learn, as demonstrated by "one student having said that he made up for the deficiencies in previous lessons and would come to the lessons from now on." While the students quickly finished their assigned homework in the first week, they were expected to pass one level in the Duolingo Web 2.0 tool that consisted of five steps, but some

of the students managed to pass more than one level.

Participation

One of the primary goals of a lesson is for students to actively participate. According to the results obtained from the students, the method used in the current study was deemed quite effective in terms of course participation. According to the data collected, despite the fact that the lessons were conducted early in the day, it was concluded that the students attended with enthusiasm, and that this increased once they saw that they were earning points. When compared to the other online lessons, the students' level of participation in the German lessons was considered to be far above the average.

Another point that notably caught the students' attention was when their friends, whose presence they had not felt as much in their other online classes, requested to speak in the German lessons and made comments. Another significant outcome was that many of the students' friends were involved in the group and were constantly asking each other questions. For example, S1 stated that the German course, unlike other courses, increased course participation visibly since gamification was included, saying that, "You do it [participate] a little bit more with games in the lesson, or you attend lessons more compared to other lessons." S1 also stated that she observed both the presence and active participation of friends that she could not otherwise see in her other online classes.

S6 also observed that the participation in the lessons increased from group posts, and that everyone was trying to share something; a situation that was considered quite different from other online lessons, mentioning that;

> I think the participation has seriously increased because, for example, when we look at the group, we see that almost everyone contributes to the lesson. They are making more of an attempt to participate in the lesson. When compared to other courses, there is a higher level of participation. [S6]

In addition, S11 talked about the same situation, but from a broader sense, whereby the only reason that students do not attend lessons, according to him, is where they are bored in that particular lesson. S11 explained his own absence from the course, but stated that participation in the German course had increased;

> For example, the reason for the increase in class participation is that a student does not attend class because it is boring. But, for example, if it [a class] is enjoyable, such as when games are used, that can encourage the student to participate in the lesson. [S11]

Another factor that increased student participation in the course was the game-based environment. In this regard, S8 compared the German course to others they attended and stated that competition between peers is an important factor in increasing course participation, "I think that participation has increased compared to other courses. Because of Classcraft, there has been an element of competition, and we are all trying to get ahead of each other. As a result, class participation is increasing." According to S7, gamification increases student interest and participation because it makes them feel like they are being compensated for their efforts. "Earning points is like being rewarded, and getting the reward for doing this makes you feel good and increases participation and interest." Even receiving points helped to reflect the students' psychological sub-sense that their efforts were being duly rewarded. It was observed that earning points within a virtual environment helped to increase the students' interest in lessons, and was also seen as very effective in increasing their participation in lessons.

According to data from the teacher's reflective journal, students who were previously in a passive position and did not attend many lessons switched to becoming more active and participative in the

lessons. In fact, the teacher stated that students who had deficiencies in previous lessons worked extra hard to make up for the gap, and now attended lessons.

Focus

While it is difficult for students to always focus their attention on lessons, the students' findings from the current study indicate that these types of applications (i.e., gamification) can be very helpful in maintaining students' lesson focus. The fact that the students is this case were not studying within a classroom environment (as courses were being given via distance education due to the pandemic), as well as the presence of many variables and distractors around them, was a compelling factor in their being able to maintain focus on the course, and in particular with it being an online course. While S8 stated that their focus level decreased in lessons in which they felt bored, he also stated that entertainment in lessons taught with games helped to increase their focus on the lesson;

> *When we have lessons with the game, it makes it more fun and helps us focus because otherwise we get bored and can't focus sometimes. That's why we don't understand much, but when we play a game, we focus better because we're having fun. [S8]*

When asked what she thought about lessons taught using games, S7 stated that teaching the lesson differently rather than by the stereotyped lecture method made it easier for them to focus on the lessons, saying that; "It's good, it makes it a little more fun with different patterns, it makes the subjects and the lesson more focused." When asked if teaching lessons in this manner made any difference, S10 stated that being in a continuous activity helped to improve certain things, such as lesson attendance and being able to concentrate during lessons, saying that, "Because it's a constant routine, our attention to the class has increased, and our focus speed has also increased."

Competition

When it comes to games and gamification, one of the issues that many people consider is the sense of competition it would likely instill. For some, the feeling of competition motivates them to achieve more; whereas for others, the feeling of competition may cause them to be reticent of starting that job and could refuse to show any interest in it. According to the data gathered from the student focus group interviews, the majority of the students enjoyed the competitive environment of the lessons delivered with gamification, saying that it helped to motivate them to study. When S2 was asked whether or not the gamified application had any effect on their learning German, the first thing that came to mind was competition, which she explained as being beneficial in improving their German language knowledge because it pushed them to do more homework:

> *I think it happened because it brought us into a competition, and through this competition we increased our desire to work and even started doing the homework right away. So, yes, I think it's useful. [S2]*

S10, on the other hand, eagerly repeats the subject at home in a lesson prepared with a game that she has previously experienced, reflecting the competitive environment she feels in the classroom environment. She talked about this saying; "There was so much to memorize, and so we formed a group like this, which was really good. I also went home having lost the game and worked hard on it over and again, so it was pretty good to help me to memorize." S6 stated that the ambition she felt increased her excitement, saying, "I wanted to succeed as I felt more ambitious. I don't know, it added a little excitement, something like that." S8 described the competitive classroom environment, saying, "There was competition, especially because of Classcraft, and we were all trying to get ahead of each other."

However, some students expressed their dissatisfaction with the situation. For example, based on

the comments of S3, we can see that she disliked the competitive environment of the gamified application, having said, "I believe there is only one disadvantage: I dislike too much competition. It makes me nervous, but not overly so; I don't like competition in general, but I believe that's the only drawback." S7 had similar feelings to S3 in that she did her homework because it was her responsibility in the first place, but that the competitive environment did not make her feel good. S10, on the other hand, stated that the element of competition did not affect her that much, as she simply attempted to fulfill her responsibilities, but she did her homework voluntarily, rather than as an obligation, "Because tasks are set as homework, it appears to me that it is not based on volunteerism, so for example, it seems like something I should simply do rather than as part of any competition." Even though S2 was a student who dislikes competition and claims that it causes her stress, she believes Classcraft to be a good tool that can help encourage students to learn, and that it may attract the attention of her peers, which can otherwise be a little difficult. The points earned are seen as the competitive environment's tie-in factor. It was observed in the study that some students will go to great lengths to obtain additional points. S8 expressed that the competitive environment created by the desire to earn points made him feel good, saying, "I think it was good because Classcraft brought us an element of competition with points to be earned."

Data from the student reflective journals showed that the students' feelings of competition were generally positive. Students who stated that the gamification application provided a competitive element within the classroom environment, in terms of scores in particular, stated that this can affect their ambition and activity levels. S14, for example, explained how the application aided her German language studies, stating that, "Gaining points from the activities I complete makes me more ambitious, and helps to encourage me to study German." Furthermore, some students stated that the international leagues in Duolingo are quite developmental because they can increase the desire for students to do more and to do better.

Anxiety

According to the student reflective journals, the pretest exam was the first situation in which the students had felt uneasy. Even though they were aware that the exam would have no material impact upon their school grades, some felt unable to let go of their anxiety. They were mostly concerned about not knowing enough German words, as S17 stated; "I felt uneasy when I heard that there would be an exam because there were still words that I couldn't memorize." Furthermore, some students stated that their German learning processes, which began with their apprehension about learning a new language, changed positively as a result of the study's experimental implementation, and that they were more enthusiastic about their lessons as a result. Those students who experienced stress whilst using the tools were most concerned with their being able to gain sufficient extra points, despite the fact that they only gained points by completing the set tasks in the gamification tool. For some, this increased the amount of stress that they felt whilst using the application.

Due to the pandemic, the online education process was started at home, and the students did not take any school-based exams until after the study process had begun. As a result, some of the participant students had appeared nervous during the pretest. The teacher, on the other hand, expressed being nervous because this was their first time administering such an exam to their students. Some of the students stated that they were afraid even before beginning to learn German. Finally, some of the students made mistakes during the lessons because they were perhaps too eager seeking points during the practice sessions.

Views on the German Course

As the majority of the participant students had no prior experience of receiving German language tuition, they, like everyone else, approached the lesson for the first time with a sense of skepticism and trepidation. S11, for example, expressed experiencing certain feelings prior to undertaking the

German lessons and how, through gamification, he had become more relaxed and less fearful:

> *I was a little afraid of German when I was in the ninth grade, I cannot lie, but the gamification really made it all that bit more comfortable; it helped a little, you know, it was good. [S11]*

Similarly, S7 stated that lessons taught in this manner made her feel good, saying; "I think it would be better to see another lesson having such games after all these ordinary, normal lessons" and that there was nothing to be afraid of with lessons that contained an element of gaming. S7 also stated that she looked at it with the idea of learning German better, saying that, "I was looking at learning German with some fear, but when it comes to the game application, I realized that there was nothing to be afraid of."

For some students, the mere existence of a subject to be studied at school was enough to trigger bouts of anxiety. S10, for example, stated that, while she was eager to learn languages, seeing German as a school subject automatically made her nervous: "I am someone who is interested in learning, but when I see it as a lesson at school, I inevitably become nervous." S10 did, however, say that learning German became easier by overcoming this initial tension after having started to use the gamified tools saying that, "These games helped to relieved my tension and made it easier for me to learn the language." The lessons, which did not draw a very positive profile for S11 either, changed course with the help of the games, and a more positive point of view was forthcoming; "I was not very friendly before, but I started to feel warmer once we started using the games, which helped me to realize that I could now learn German after all." We can deduct from a comment made by S2 that "it contributed a lot to the lesson," and that gamified lessons positively contributed to her self-improvement through improved learning of the German lessons. According to the findings, the students' perceptions regarding the German language lessons, which had a largely negative profile and instilled a sense of fear of not learning the language properly, notably shifted to be more positive, and that the gamified lessons encouraged the students to learn.

Views on the Gamification Tools and Processes

When the students were asked to evaluate the process applied in the study, it was revealed that the process left them with a generally positive feeling. For example, S8 stated that because of the tools used while evaluating the previous teaching, his knowledge of German improved more than expected, and thereby was able to state that the process had elicited a positive effect on him; "Five weeks passed by quite well, and since we have used the applications, I think that my German has improved since we also use Duolingo, Classcraft, etc." The assigned tasks had not been seen by some of the students as a challenge or an obligation, but rather as a form of entertainment or relaxation. S10 stated that, "We have been doing these tasks regularly for 5 weeks and have received more support for our homework; it is as if we are now really learning German." S10 also stated having encountered new tasks assigned to them on a regular basis each week.

The students all agreed that they had a good time and a positive experience using the implemented tools, as well as from the overall process. When asked about the gamification tool, S5 summarized his thoughts in one word, "beautiful," saying that "the only thing I can say is that it was beautiful." When asked about the positive and negative aspects of the gamification, S1 stated that "I couldn't see a negative side really." S6, in her evaluation of the overall process, stated that if she were a German language teacher, she would try to manage the process in a similar manner, and that there were no missing components in her opinion. S6 also stated that, "there were no flaws, and it was all very good."

The long-term pandemic process, in particular, had made it difficult for some students to focus properly upon their academic studies. The current study, on the other hand, became a tool used by

the students to increase their interest in the German language lessons and to help them focus on their studies. S10, for example, mentioned the pandemic and the processes of the current study, stating that even those who did not want to learn a language were more motivated to learn, and that a negative side to the current study could not be seen:

> *If I were a German language teacher, I doubt I could evaluate such a period in this way. You know, not everyone can learn a language, and especially if they don't really want to. However, I believe you motivated everyone in this way. In my opinion, there was nothing negative about the whole process. [S10]*

In addition to successfully overcoming some of the negative perceptions, it is seemingly clear that the students' German knowledge was likely to change for the positive by the end of the process. For example, S9 described his German language improvement as "increasing knowledge in the course" as a summary of the tools' contribution to the students' academic progress. S8 also stated that, in contrast to the lecture-format courses, his German knowledge and skills had notably improved more and quicker as a result of the practices implemented that utilized the gamified tools; "My German has improved a lot thanks to the practices we did. I don't think it would have improved that much if we had just taken the normal course, but my German seems to have developed much faster thanks to the practices we had." The findings yield a general conclusion that the implemented process had the desired effect on the students, and reportedly contributed positively to their German language development.

The data from the student reflective journals revealed that there was a shift seen in the students' attitudes toward their German language lessons by the end of the application process, as, according to the students, it all made learning German that much easier and more enjoyable. Music-framed exercises helped to attract the students' attention and liking of the lessons. Furthermore, while each tool helped to pique the interest of different students, they emphasized that their German learning outcomes were highly productive in this regard. Those students who stated that they experienced a different environment outside of the normal classroom as a result of the gamification application felt as if they were in a game-based environment rather than a school classroom.

At the same time, those students who stated that the assigned homework helped to increase their commitment to school lessons during the difficult times of the pandemic undertook to complete their homework enthusiastically each week. Some of the students emphasized that even those who previously did not complete their homework were more able and likely to do so. One of the most important contributions of the implementation, according to the students, was their being less afraid to make mistakes. Given that fear of making mistakes is a common factor that holds back or demotivates language learners, this is considered to be very positive feedback indeed.

According to the findings obtained from the student reflective journals concerning the end-of-process evaluation while the research was still ongoing, the online learning process resulted in convenience at some times and various difficulties at others. Some of the students, for example, were unable to participate in the pretest because they had fallen asleep, whilst others had experienced issues with Internet connectivity at home or elsewhere. Many of the students found the Web 2.0 tools that were used to be understandable, and that they experienced no difficulties in completing the assigned exercises, and this was especially evident during the first few weeks of the implementation. Despite the fact that the assignments set during the subsequent weeks were probably considered more technically difficult, the students stated that the tools had made learning that much more easier with the use of songs.

Data obtained from the teacher's reflective journal during the application process revealed that some of the students had experienced difficulties in some situations, but that they were able to easily overcome others. For example, students who were not active in the lessons prior to the

study period struggled with some of the tools and achieved poor results. At some points the teacher struggled to find songs that were deemed appropriate for the unit topics and target audience. Receiving feedback from three different tools each week and then having to add those points to another tool took some considerable time and effort for the teacher. Finding appropriate songs and preparing them on the tools, as well as carrying out the various processes, were among the most difficult aspects of the process from the teacher's perspective. Lastly, some of the students complained that the number of tools was excessive, and that they experienced difficulties completing all the tasks of their other courses as a result. Furthermore, some of the tools used in the current implementation were seen as difficult for some of the students to use. To illustrate this point, one of the tools used in the process used both English and German languages, and some of the students struggled and requested tools that provided instruction in their native language of Turkish.

Another difficulty reported was the process of determining whether or not the students had adequately completed their assigned work tasks. With the assistance of some of the students' parents, who were following the progress of their children, there was a need to encourage the students to work more diligently in order to improve their language skills, rather than simply taking notes on the process. As some of the students did not see the study's outcome in terms of a grade on their report card, they seemed more able to complete the process easily and thoroughly in order to learn the language. It was observed that some students easily and enthusiastically passed the levels using some of the implemented tools. After a while, the students stated that they were singing the songs off by heart since they had been trying so hard.

Impacts on German Language Skills

The effect of gamification on the students' German language skills was also evaluated at the end of the implementation process, with various findings revealed. These findings are organized and presented under five subheadings.

Listening comprehension

According to the data collected from the students, the tools used had an effect on the listening comprehension skill of the students. S1 explained the importance of listening comprehension and the effect that the studies had on her; "German is a different language for us, after all, and it is important to be able to listen to words we don't know in a different language and to perceive the correct word, so it improved me in this regard."

S7 stated that her listening comprehension skills improved, saying that "I think it definitely improved us, especially with Lyricstraining and Duolingo," and S3 stated the following,

> *I believe it was very beneficial, particularly Lyricstraining, which I think was more beneficial than Duolingo. You can more easily perceive what you listen to and what you hear when you write. When it's right, it feels good and can even make you feel happier. [S3]*

S4 stated that he had experienced difficulties in understanding what he had previously listened to, but that the applications were very helpful, saying that, "In terms of pronunciation, Lyricstraining and Duolingo made it easier for me to understand. I generally don't understand German accents that well, but I believe these applications helped me." S10, from a similar perspective, stated that now, when she hears another language, she can tell whether or not it is German;

> *I still cannot translate German [into Turkish] when I hear it, but at least when I hear and recognize something now in German, for example, I can now understand that it's German because the songs really helped me audibly, so if someone speaks German, I now know that at least. [S10]*

S8 also responded positively to the question of whether or not there had been a change in their

listening comprehension, explaining that as a result of the work they had undertaken, he was able to partially understand and partially answer a German speaking person;

> *It helped me understand what I was hearing. For example, if someone speaks German in front of me, I can understand it now, even if I don't fully comprehend it. However, I still cannot respond as I'm not sure about it still; but, I can do something now, even if it's just a little bit, and respond with what I've learned. In this regard, Lyricstraining has been more beneficial because, whereas we use intermediate words in songs, we only used more basic words and sentences in Duolingo. [S8]*

S9, on the other hand, refused to learn, stating that it was difficult to understand what he was listening to at first, but that now he feels a little more relaxed as a result of the implementation; "Before I started, I had built up a wall for myself, and I didn't even want to learn. In that regard, it's a little better now."

From these various comments, an improvement in the students' listening skills can be seen, which is the primary outcome expectation of the implementation. According to the findings from the student reflective journals, each tool worked very well in terms of improving the students' listening skills, with the exception of the gamification tool. For example S15 stated, "I never understood what German speakers were saying before, but now I understand a little bit, even if not that much. I think that the listening assignments we had through EBA affected this considerably." The same student also mentioned that the improved listening skills were made possible due to the assigned homework during the implementation. Some of the students also stated that attempting to understand the lyrics of the songs proved extremely beneficial.

Pronunciation

While one of the study's main goals was to examine the effect of the implemented instruments on the listening comprehension skills of students, the findings also included information on their pronunciation and diction skills. When asked to interpret the 5 weeks of study, the students stated that each tool they used had helped improve their pronunciation skills. While S2 stated that all the tools used were very useful, she focused on one tool in particular in terms of improving her pronunciation skills, stating, "I found it useful because applications such as Lyricstraining teach us pronunciation." The songs used in this tool both attracted the students' attention and helped them to improve their pronunciation skills. S1 stated that "We did some diction work on the subject of pronunciation, and thanks to the songs we were played," having been able to work on her pronunciation thanks to the exercises undertaken that utilized the use of songs.

Furthermore, during this process, the students were noted to have improved their skills of correct pronunciation, which they had felt were previously lacking. S4 in particular reported that he had improved his pronunciation, which was an area in which he had previously struggled, stating that, "I had a lot of difficulty in pronouncing German, but I have improved my pronunciation with things like Lyricstraining." S8, on the other hand, stated that he was able to overcome his pronunciation issues during the 5 weeks of the implementation. According to S9, the study presented a step forwards in terms of their pronunciation, but it was still considered difficult because "Our pronunciation or what we do is improving in practice, but unfortunately it is still very difficult." Aside from the fact that each student's ease or difficulties may differ, the development of the tools can also change from time to time. Although many students pointed out one tool on the topic of pronunciation, other students had managed to improve their pronunciation using other tools. For example, in response to the question of whether or not these tools had improved their listening skills, S6 stated that she had experienced considerable difficulties previously, but thanks to the aids used, she was able to solve her problem a little more and had improved her pronunciation.

> *At first, I couldn't understand the German accent or anything, and I even had trouble*

> *pronouncing the same, but I improved after using Duolingo and Lyricstraining. Now, while I still don't understand it exactly, I do understand a little bit more of it. My pronunciation has also improved. [S6]*

The findings of the change in pronunciation skills can also be found in the data obtained from the student's reflective journals. For example, S18 stated that "I couldn't pronounce German before," emphasizing a potential change in their pronunciation skills. They also stated that they developed their own accent by listening, and as a result, their ability to speak certain words in the target language had improved. S20, for example, stated that "The songs are fluent and catchy, and I now wander around humming the songs all day long," and that repetitions occur even unintentionally. At the end of the application process, one area that needs to be developed is also a result that meets the change in pronunciation skills, while the goal itself was to develop listening skills.

Vocabulary

According to the data obtained from the focus group interviews, it was revealed that vocabulary learning was another subject area in which the students had improved through use of the tools introduced during the implementation. Learning vocabulary can be a time-consuming and exhausting task for all. However, based on the comments of the participant students in the current study, it is clear that the tools used were seen as extremely beneficial in terms of the students learning new words in the target language. For example, S1 compared the tools she used, and stated that one was more useful and had helped her to improve her vocabulary, stating that, "Duolingo worked better to improve my vocabulary," whilst S11 said that "With Duolingo, I learned more words and I learned them in a shorter time." It can therefore be deduced that the Duolingo tool used helped the students to learn more and to learn faster, and was therefore perceived as being quite useful. In terms of the students' vocabulary learning, Duolingo ranked first among the tools used according to the study's participant students. As she improved her vocabulary, S3 mentioned that the same tool took front row, saying that, "Duolingo was the best of the three apps we used, and contributed the most and helped me to improve my vocabulary."

When asked about the positive and negative aspects of the tools used, the students stated that they helped them to learn new words. S4 expressed how, thanks to using the tools, that he and his peers were able to easily overcome their deficiencies, stating that, "A person with a lack of words [vocabulary], a person unable to construct sentences can learn with Duolingo." Even if not every tool used was considered relevant to the main goal of the study, they were each proven to be very effective in the teaching and learning of German vocabulary. S3 stated that she preferred Edpuzzle to Duolingo in terms of learning words in German, saying that, "There were words I didn't know in Edpuzzle, and I wanted to research them."

According to the findings from the student reflective journals, one area of the data that was not specifically targeted but developed as a result of side learning in the study's implementation was that of the students having learned new words. Although each student perhaps used different tools that helped them specifically to learn new words, some stated that they had been able to memorize the articles of words they had previously learned, whilst others stated that they reinforced their knowledge of words they had previously learned. S17 stated that the Duolingo 2.0 tool had made it simple to learn new words, saying, "I think it's good and developing in terms of learning new words." The students also stated that their learning was both enjoyable and long-lasting. Given that the learning of new words is one of the most important aspects of language learning, the study's contribution has been remarkable on that front.

Grammar

Although the tools used in the scope of the current study were focused more on listening comprehension skills, data from the participant students revealed that their grammar skills had

also improved. Students who stated that they improved their ability to form sentences, make various expressions, or translate better cited Duolingo as the resource they learned the most from. For example, S7 stated that she improved in terms of her German grammar, and because Duolingo was a one-to-one teacher; her interpretation was that it was "better in terms of grammar too."

S2 emphasized the comprehensive nature of Duolingo's teaching purpose by stating, "There were regions that taught sentence patterns." S3, on the other hand, mentioned that "I understood the sentence structure more easily," and had developed her sentence building skill which she learned, although could not yet consolidate. Despite the fact that the students had previously learned how to form sentences in the German language, they Also need to encounter something new in a variety of settings. For example, S4 demonstrated that, as a result of this implementation, he came up with an answer to the question of what a certain sentence should be in his mind, commenting that, "I think I learned to construct more sentences in Duolingo." S10, on the other hand, emphasized that the Duolingo tool helped her learn more and that her sentence construction skills had improved as a result, adding that, "it also improves sentence structure." S4 stated that people can improve themselves in areas of study where they believe they are lacking, stating that, "A person who lacks knowledge of a certain sentence can learn from Duolingo."

Furthermore, S2 stated that over the course of the 5 weeks, she was able to improve herself, saying that, "They taught us German phrases better," and as such her ability to understand and answer questions had improved, since it was necessary to be able to translate in direct proportion, and to speak using correctly constructed sentences. S2 added that, "In Edpuzzle, it was very useful to be able to ask questions in between, so I could understand what was being asking since it was in German." Many subjects and topics are intertwined when learning a language, and the skills that emerge can vary proportionally.

The findings from the reflective journals revealed that, while the primary goal was to improve the students' listening language skills, their German learning skills were found to be varied and versatile. First and foremost, the students were able to easily reinforce what they had learned during the lessons, which is critical if the learners are to retain the information over the long term. According to the data collected from the participant students, their sentence formation skills also notably improved, stating that they were now more able to form sentences and that it was considered beneficial to learn sentences that they may later encounter in daily life. Although the students were perhaps not that good to start with, they stated that their German language skills improved on a daily basis, and that the homework they were assigned was considered to be especially helpful. They also stated that the tools used were extremely beneficial in direct proportion. Furthermore, those students who noted improvements in their German language reading, writing, and speaking skills found the developmental process to be versatile. They stated that being able to write what they had heard had helped to improve their writing skills, that singing songs and undertaking audio-based assignments helped to improve their speaking skills, and that improving their pronunciation skills also helped to improve their reading skills. One student also stated that, despite spending so little time per day, they had improved their understanding of word meanings, sentence formation, pronunciation, and comprehension of what had been listened to.

b. Quantitative Findings

A pretest of 25 of the participant students' listening comprehension skills was conducted prior to the start of the research process, and a posttest of the same students was also conducted at the end of the study so as to measure the effectiveness of the research. Despite the fact that the class consisted of 34 students, the number of students who took both tests was 25, with some students unable to complete the tests due to an Internet outage, whereby they were prevented from accessing the test online, whilst others fell asleep and some displayed little interest in studying at

all.

Measurement	N	M	SD	df	t	P
Pretest	25	65.16	16.91321	24	-3.388	.002
Posttest	25	77.28	13.65198			

Table 3. Statistical results

It can be concluded from Table 3, which reports on the dependent sample t-test, that a significant difference was found to exist between the pretest and the posttest scores of the participant students, with a p value revealed to be less than .05. According to the results of the analysis, the pre-measurement average of the 25 students was 65.16, whilst the post-measurement average was 77.28 (see Table 3), based on data obtained from the histogram. There was also a statistically significant difference revealed between the points that the students receive prior to the application and the points they received at the conclusion of the research. The normality analysis of the obtained data was done with the Shapiro-Wilk test. Both pre-test and post-test data were found to be normally distributed ($p>0.05$). At the same time, the dependent sample t-test was used to evaluate the data.

IV. Discussion

According to the findings of the current study, the use of Web 2.0 tools enabled through use of the gamification method managed to capture the participant students' attention, and strengthen the steps taken to improve their language learning skills. Although the students' learning styles varied in the study, one thing they shared in common was the use of gamification.

Gamification with Web 2.0 tools was found to have a positive and improving effect on the students' listening comprehension skills. A general literature review revealed no other studies had been published in which gamified language learning courses had been created using Web 2.0 tools. Various studies on both Web 2.0 tools and gamification methods were noted, although they formed separate research studies. For example, Tahir (2019) observed that a German course designed with the help of podcasts piqued the interest of students, and that they tended to use these tools outside of the classroom environment. Tahir's (2019) study reported that the use of Web 2.0 tools, similar to the findings of the study, both attracted the students' attention and helped to encourage more research work in this field.

Furthermore, studies published on English language skills were noted in the literature. With findings similar to those of the current study, Boghayeri and Khany (2015) reported whilst no significant progress was seen at the beginner level, the effectiveness of an application using Web 2.0 tools was demonstrated at the intermediate and advanced levels. They reported that a more positive effect was seen on the participants' reading and writing skills, in addition to listening skills, which supports the findings of the current study. Furthermore, as a result of the data obtained in the current study, there were positive changes noted in the speaking skills of the participants.

While some of the students in the current study stated that they were unable to understand the German language words heard prior to the study, they noted being able to understand them by the end of the study, which is similar to the findings reported in San's (2020) study on English language comprehension skills. Virtual environments, as evidenced by the findings of numerous studies, have been shown to help improve the listening skills of students.

In addition to listening skills, the current study also revealed improved academic outcomes, such

as increased vocabulary, a positive effect on speaking skills, and a positive effect on writing skills. Similar to the findings of Akgun Kayseroglu and Samur's (2018) study, students in the current study were eager to learn German and their vocabulary increased throughout the period of the study's application. Gün (2015), on the other hand, concluded in his study using Web 2.0 tools that positive changes in students' speaking skills were observed, which is similar to the results obtained in the current study, but that no statistically significant difference was established. Çenesiz and Özdemir (2021) concluded in their study that a course prepared with Web 2.0 tools had a significant effect on their participants' academic achievement, which is similar to the results revealed from the data obtained in the current study, and that the participant students' attitudes toward geography teaching were seen as positive. Whilst the course administered was clearly different than that of the current study, the results revealed a similar attitude. Ince (2011), on the other hand, concluded that no relationship was found to exist between the learning styles of students and their English language writing skills following the use of Web 2.0 technologies, despite positive changes seen in the writing skills of the current study's participants.

The gamification method employed in in the current study's second foreign language German lessons, combined with the use of Web 2.0 tools, was deemed successful in capturing the attention of all the participant students. When compared to non-gamified lessons, there was a significant difference noted in student participation, with the favorite gamification steps noted as scoring, ranking, and leveling. According to Demkah and Bhargava's (2019) research findings, the gamification mechanics work very well in a cooperative environment, even if less so in a competitive environment. Similarly, one of the findings of the current study was that some of the students disliked the competitiveness of the learning environment, despite the fact that it was specifically kept to a minimum during the implementation. According to Garland (2015), in addition to positive contributions to student motivation and learning, negative results can also be obtained in some studies due to the presence of a seemingly uncomfortable competitive environment.

According to Thorne and Watters (2013), digital games have now become an unavoidable part of our daily life. According to the students' responses in the current study, one of the most interesting aspects of the research was comparing the implemented gamification application to the games that the students played by themselves. The findings showed that the introduced games were more efficient in their work and transactions based on this analogy. The use of avatars was another gamification element that attracted the students' attention in the current study, which was also mentioned by Pardoel (2018) in his study, with gamification elements having had a significant impact on students' experiences. However, as previously stated, many factors can play a significant role in the effectiveness of course management. According to the findings of Özkan and Samur (2017), a well-designed game is required in order to realize an effective gamification experience, and as discovered at the end of the current study, it can positively affect student motivation and thus also enhance their learning. At the same time, as seen in the findings obtained in the current study, and as also observed in the research results of Hüner (2018) and Kavaklı Duman (2019), a gamified course can have a positive effect on students' academic achievement as well as their academic motivation.

Based on the data collected in the current study, the students' perspectives on the gamified lessons transformed into highly motivating and supportive learning. According to student comments, the lessons were taught in a more enjoyable classroom environment and a more permanent learning took place as a result, as evidenced through examining the previous learning of some of the current study's participants. In general, it may be stated that students need to feel good psychologically in order for effective learning to take place, which can easily be provided with a gamified course environment. Similarly, many different psychological foundations of gamification were mentioned in Amberg and Schlagenhaufer's (2014) research. Similarly, the current study reported encouraging results in that many psychological factors were developed in a positive

manner according to improvements seen in the students' desire to learn. Many studies on gamification have been developed in this context, based on the positive psychological foundation it provides. According to the findings of Yildirim (2017) study, students developed a positive attitude toward their lessons.

According to research published by Karabacak (2018) and also Uyar (2019), gamified lessons can increase students' academic motivation. It was also revealed that, similarly, students' motivation and interest in their lessons increased, as did their skills in areas such as cooperation and teamwork. Similar to the current study, Donmuş and Gürol (2015) discovered that the use of gamification had a positive effect on the academic success of learners, whilst Karatekin (2017) found that gamification did not contribute to students remembering knowledge, but it did contribute to their being motivated and more participative in lessons. However, based on the data collected in the current study, the participant students stated that the information they had obtained by the end of the gamified study was considered permanent. At the same time, many other studies have reported positive effects on motivation and class participation as commonplace.

Based on the findings of all of these studies, it may be concluded that gamification is a very useful approach in terms of psychological motivation, class participation, and the development of a positive mental attitude of students toward lessons, which is consistent with the strongest findings obtained in the current study. Additionally, when progress is made under effective and continuous control, targeted developments are unavoidable. Although the individual differences of each student group may alter the course of the studies, the individual characteristics of each practitioner and the efficacy of the studies may differ. It should not be forgotten, however, that both Web 2.0 tools and gamification methods cover a wide range of topics, and that each variable can have different impacts upon the outcome, which may be positive or negative. However, the most common outcome seen for the application of Web 2.0 tools and gamification methods has been a positive effect on learner motivation.

Changes in terms of the listening comprehension ability of second foreign language students, based on the gamification method having been applied using Web 2.0 tools, was examined within the scope of the current research. It is hoped, therefore, that the study's findings will help language teachers to improve the listening comprehension skills of their students through developing lesson plans that incorporate the implementation of appropriate methods. Simultaneously, Web 2.0 tools that target other language skill areas can also be considered for use in language lessons. Other branch teachers and language teachers may consider the use of gamification in order to attract students' interest and motivation to learn, with gamification tools that are deemed most appropriate for their own student profile. Throughout the process, students can switch between tools based on their interests and attention. Points earned by students during gamified learning can also be evaluated as a performance guide according to planned progression throughout the teaching semester.

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Efecte de les eines de gamificació web 2.0 en les habilitats de comprensió auditiva en un curs d'alemany com a segona llengua estrangera

Resum

L'objectiu d'aquest estudi és investigar com la gamificació mitjançant eines Web 2.0 afecta les habilitats de comprensió auditiva dels estudiants de secundària en un curs d'alemany com a segona llengua. Els subpropòsits són investigar els resultats de l'estudi, com ara l'interès del curs i la motivació acadèmica. El disseny de l'estudi es basa en la investigació--acció, un dels mètodes reconeguts d'investigació qualitativa. Els participants de l'estudi eren 34 estudiants de novè de batxillerat (15 homes, 19 dones) de 14 o 15 anys inscrits a una escola pública. Es van utilitzar entrevistes de grups focals, diaris reflexius tant d'estudiants com de professors, i una prova de rendiment acadèmic per avaluar les habilitats de comprensió auditiva dels estudiants participants. Segons les conclusions de l'estudi, l'ús d'eines Web 2.0 mitjançant el mètode de gamificació va ajudar a captar l'atenció dels estudiants i a reforçar els passos realitzats per millorar les seves habilitats d'aprenentatge d'idiomes. Tot i que els estils d'aprenentatge dels estudiants variaven, un punt en comú era l'ús de la gamificació.

Paraules clau

Gamificació; Web 2.0; Investigació Acció; Ensenyament d'alemany; Habilitats de comprensió auditiva

Efecto de las herramientas de gamificación web 2.0 en las habilidades de comprensión auditiva en un curso de alemán como segunda lengua estrangera

Resumen

El objetivo de este estudio es investigar cómo la gamificación mediante herramientas Web 2.0 afecta a las habilidades de comprensión auditiva de los estudiantes de secundaria en un curso de alemán como segunda lengua. Los subpropósitos son investigar los resultados del estudio como el interés del curso y la motivación académica. El diseño del estudio se basa en la investigación-acción, uno de los métodos reconocidos de investigación cualitativa. Los participantes del estudio eran 34 estudiantes de noveno de bachillerato (15 hombres, 19 mujeres) de 14 o 15 años inscritos en una escuela pública. Se utilizaron entrevistas de grupos focales, diarios reflexivos tanto de estudiantes como de profesores, y una prueba de rendimiento académico para evaluar las habilidades de comprensión auditiva de los estudiantes participantes. Según las conclusiones del estudio, el uso de herramientas Web 2.0 mediante el método de gamificación ayudó a captar la atención de los estudiantes y reforzar los pasos realizados para mejorar sus habilidades de aprendizaje de idiomas. Aunque los estilos de aprendizaje de los estudiantes variaban, un punto en común era el uso de la gamificación.

Palabras clave

Gamificación; Web 2.0; Investigación Acción; Enseñanza de alemán; Habilidades de comprensión auditiva

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