ΣΧΟΛΗ ΚΟΙΝΩΝΙΚΩΝ, ΑΝΘΡΩΠΙΣΤΙΚΩΝ ΕΠΙΣΤΗΜΩΝ ΚΑΙ ΤΕΧΝΩΝ

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ΠΡΟΓΡΑΜΜΑ ΜΕΤΑΠΤΥΧΙΑΚΩΝ ΣΠΟΥΔΩΝ

ΕΠΙΣΤΗΜΕΣ ΑΓΩΓΗΣ: ΕΦΑΡΜΟΓΕΣ ΤΕΧΝΟΛΟΓΙΩΝ ΠΛΗΡΟΦΟΡΙΑΣ ΚΑΙ ΕΠΙΚΟΙΝΩΝΙΩΝ (Τ.Π.Ε.) ΣΤΗΝ ΕΚΠΑΙΔΕΥΣΗ ΚΑΙ ΤΗ ΔΙΑ ΒΙΟΥ ΜΑΘΗΣΗ

Μεταπτυχιακή Διπλωματική Εργασία

ONLINE GAMIFICATION AS A TOOL FOR INCREASING LEARNERS' ENGAGEMENT IN THE GREEK EFL CONTEXTS

της

ΔΕΣΠΟΙΝΑΣ ΒΕΚΟΠΟΥΛΟΥ

Υποβλήθηκε ως απαιτούμενο για την απόκτηση του
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To my two beloved children, Stelios and Asteris

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Online gamification as a tool for increasing learners' engagement in the Greek EFL contexts

Abstract

The last decade gamification has become a popular educational tool. An increasing number of EFL teachers integrate it into their lessons to create real life situations, improve learner's experience in classroom and promote their engagement. This innovative practice is suggested in this study as an effective teaching aid to overcome the deficiencies of Greek EFL textbooks to follow the communicative guidelines of the curricula. The purpose of this dissertation is to examine learners' perception on whether the application of online gamification in Greek EFL contexts can enhance their skill and interaction engagement. The investigation is based on the research model developed by Ahmad et al. (2018) to investigate learners' acceptance towards gamification and its effect towards their engagement. The basis of this model was the Technology Acceptance Model (TAM) by Davis et al. (1989) and Student Course Engagement Questionnaire (SCEQ) by Handelsman et al. (2005). The model consists of five variables: Perceived Usefulness, Perceived Ease of Use, Attitude towards using gamification technology, Skills Engagement, and Interaction Engagement. The relevant literature of ICTs and gamification is also reviewed. The participants were seventy learners of the Junior High school of Kassandra. They were exposed to gamified lessons during the first semester to develop their grammatical competence. The questionnaire proposed by Ahmad et al. (2018) was used to collect data and the analysis reveal that perceived usefulness affects positively learners' attitude and skill engagement. Additionally, learners' attitude has a statistically significant impact on both skill and interaction engagement. Also, the more students develop their skill engagement, the more they develop their interaction engagement and vice versa. Lastly, perceived ease of use is not a factor that can influence learners' opinion on online gamification.

Η διαδικτυακή παιχνιδοποίηση ως εργαλείο για την αύξηση της ενασχόλησης των μαθητών σε ελληνικά πλαίσια EFL

Περίληψη

Την τελευταία δεκαετία η παιχνιδοποίηση έχει γίνει ένα δημοφιλές εκπαιδευτικό εργαλείο. Ένας αυξανόμενος αριθμός καθηγετών Αγγλικής Γλώσσας το ενσωματώνουν στα μαθήματά τους για να δημιουργήσουν καταστάσεις πραγματικής ζωής, να βελτιώσουν την εμπειρία των μαθητών στην τάξη και να προωθήσουν την ενασχόληση των μαθητών. Αυτή η καινοτόμος πρακτική προτείνεται σε αυτή τη μελέτη ως ένα αποτελεσματικό διδακτικό βοήθημα για να ξεπεραστούν οι ελλείψεις των ελληνικών σχολικών βιβλίων της Αγγλικής Γλώσσας για την τήρηση των επικοινωνιακών κατευθυντήριων γραμμών των προγραμμάτων σπουδών. Σκοπός της παρούσας διπλωματικής εργασίας είναι να εξετάσει την αντίληψη των μαθητών σχετικά με το αν η εφαρμογή της διαδικτυακής παιχνιδοποίησης σε ελληνικά πλαίσια EFL μπορεί να ενισχύσει τις δεξιότητές τους και τη δέσμευση αλληλεπίδρασης. Η έρευνα βασίστηκε στο ερευνητικό μοντέλο που αναπτύχθηκε από τους Ahmad et al. (2018) για τη διερεύνηση της αποδοχής των μαθητών προς την παιχνιδοποίηση και την επίδρασή της στην εμπλοκή τους. Η βάση αυτού του μοντέλου ήταν το Technology Acceptance Model (TAM) και το Student Course Engagement Questionnaire (SCEQ). Το μοντέλο αποτελείται από πέντε μεταβλητές: εκλαμβανόμενη χρησιμότητα, εκλαμβανόμενη ευκολία χρήσης, στάση απέναντι στη χρήση της τεχνολογίας παιχνιδοποίησης, συμμετοχή δεξιοτήτων και συμμετοχή αλληλεπίδρασης. Επίσης γίνεται ανασκόπηση της σχετικής βιβλιογραφίας των ΤΠΕ και της παιχνιδοποίησης. Οι συμμετέχοντες σε αυτήν την έρευνα ήταν εβδομήντα μαθητές από το Γυμνάσιο Κασσάνδρας. Οι μαθητές εκτέθηκαν σε παιχνιδοποιημένα μαθήματα κατά τη διάρκεια του πρώτου τετράμηνου για να αναπτύξουν τη γραμματική τους ικανότητα. Χρησιμοποιήθηκε το ερωτηματολόγιο που προτάθηκε από τους Ahmad et al. (2018) για τη συλλογή δεδομένων και η ανάλυση αποκάλυψε ότι η εκλαμβανόμενη χρησιμότητα επηρεάζει θετικά τη στάση και τη συμμετοχή δεξιοτήτων. Επιπλέον, η στάση των μαθητών έχει στατιστικά σημαντικό αντίκτυπο τόσο στη δέσμευση δεξιοτήτων όσο και στην αλληλεπίδραση. Επίσης, όσο περισσότερο οι μαθητές αναπτύσσουν τη συμμετοχή δεξιοτήτων, τόσο περισσότερο αναπτύσσουν την αλληλεπίδρασή τους και το αντίστροφο.

Τέλος, η εκλαμβανόμενη ευκολία χρήσης δεν είναι ένας παράγοντας που μπορεί να επηρεάσει τη γνώμη των μαθητών σχετικά με τη διαδικτυακή παιχνιδοποίηση.

Λέξεις Κλειδιά:

Διαδικτυακή παιχνιδοποίηση, Ενασχόληση του μαθητή, Ελληνικά πλαίσια EFL

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Introduction

Technology has invaded in all aspects of life and modern man cannot imagine his daily life without it. Social networks, "smart" devices, electronic tools and even electronic games are services and products that shape the way we think and operate. More specifically, the huge appeal of electronic games as well as the behavior they cause in players, became the reason for a new trend to appear, gamification. The dedication, persistence and enthusiasm shown by video game players has led the market to try to incorporate elements of video games into various sectors such as blogging, health, sales promotion and education in order to replicate the same positive behavior. The experience and data from this practice show that electronic games have the ability to motivate the players, who by their personal choice devote a lot of time and effort to achieving some goals, having at the same time a sense of pleasure and fun. This finding led many companies to try to use some elements and mechanisms of games in order to offer greater motivation either to their employees, or to the buying public, to achieve specific goals set by each company.

Education has also been a field that gamification has been integrated significantly as an educational tool that can overcome teaching difficulties. To be more precise, the lack of motivation for students' participation and engagement in the educational process is an important problem that teachers are called to face. More specifically, in Greek public schools the participation of students in the English language course is often very limited to non-existent, due to the fact that textbook syllabi focus mostly on mastering of lexical or grammatical items and on exam preparation, goals that are not so attractive to teenage students. The opportunities of gaining knowledge and acquire the target language in a fun and communicative environment are limited. Consequently, the less these opportunities are, the less the levels of motivation and engagement are and as a result the demand for new innovative techniques and methods is intense. Considering students as "digital natives" (Prensky, 2001) and the use of technology as a prerequisite in the learning experience, online gamification can be seen as a new practice that can enrich learners' experience and enhance their engagement.

The present dissertation aims to investigate the integration and the effect of online gamification in Greek EFL context from the learners' perspective. More precisely, the study ex-

amines students' perception on a gamified learning experience that aims at enhancing learners' engagement to develop their grammatical competence. The opportunities for practice provided so far have been based basically on the textbook material which focuses on exam-oriented goals and formats. As a result, there is a great lack of motivation and engagement, and learners have hard time participating.

The dissertation is organised in five chapters. The first chapter makes reference to the nature and the features of second language acquisition. The discussion of the theories that undelie the second language acquisition throughout the years shows the gradual communicative evolution in teaching and highlights the importance of achieving communicative goals. Additionally, the Greek educational reality is described pointing out the deficiencies of textbooks to follow the recommendations of the curricula used in Greek private and public schools.

The second chapter focuses on defining ICTs and especially ICTs in education. Also, the chapter makes reference to the theories of constructivism, Vygotsky's sociocultural learning theory and Gardner's Multiple Intelligences which support the use of technology and gives emphasis on the development of communicative competence. Moreover, an extensive literature review concerning the potential benefits and the challenges related to the use of the specific approach in the language classroom are provided.

The third chapter presents the theoretical background and the literature review related to gamification. More specifically, the definition of gamification is given and analyzed. Then, the characteristics of the games are mentioned as well as their design rules that can be used in the design of gamification. A general reference is also made to the use of gamification in the field of education and more specifically in second language learning. Then, a thorough presentation of the two online gamification tools (Kahoot! and Quizlet) used in the particular study was also given pointing out their use and benefits. Through a bibliographic review, the results of empirical research concerning the specific application of gamification are presented. Lastly, the potential benefits and challenges of the integration of online gamification in education are described analytically.

In the fourth chapter the research methodology used is provided. The purpose and nature of the study as well as the hypothesis and research questions are outlined analytically. Furthermore, the participants' profile is given, and the context of the study is presented. The data-collection instrument (questionnaire) employed is also mentioned accompanied by the

relevant appendix (p. 85). Finally, the whole procedure followed in the study is presented step by step with references to the literature.

In the fifth chapter, the results of the research are presented in detail. The study limitations and the challenges encountered throughout the study are presented and an extensive discussion of the findings is also provided with references to the results.

CHAPTER 1

1. Literature review

1.1 Theories in second language acquisition

There have been several theories for Second Language Acquisition (SLA) throughout the years. An overview of these theories is provided in the present section in order to understand better the transitions made by language learning instruction throughout the generations.

1.1.1 Behaviorism

Behaviorism was typified by Skinner (1963) who claimed that human behavior could be learned through stimulus, response and positive or negative reinforcement. According to Behaviorists, imitation, practice, reinforcement and habit formation play a fundamental role in learning how to use a foreign language. In fact, all learners follow the same process. "They receive linguistic input from the speakers in their environment and they form associations between words and objects or events" (Lightbown & Spada, 1999, p.35). The more they repeat these experiences, the stronger the associations become. Therefore, the formation of new habits through practice and repetition and the interference of habits formed in the first language constitute the main aspects of language learning. Therefore, the Behavioristic theory focuses mostly on the influence of the first language on the target language acquisition. To understand better this idea, Contrastive Analysis Hypothesis (CAH) explains and predicts that "where there are similarities between the first language and the target language, the learner will acquire target-language structures with ease; where there are differences, the learner will have difficulty" (Lightbown & Spada, 1999, p.35). However, not all errors made by learners can be predicted and justified based on the CAH. In fact, some of them may be the cause of a more complex process rather a matter of the transfer of habits.

1.1.2 Cognitivism

Cognitivism was initiated by Chomsky (1965) who posited sets of language ideas which are innate in all human beings, and they are the basis on which human grammars are constructed. Chomsky (1965) refers to this set of language ideas as the Language Faculty or Universal Grammar (UG), "that innate knowledge of the principles of UG permits all children to acquire the language of their environment during a critical period in their development" (Lightbown & Spada, 1999, p.36). This pedagogical view triggered the evolution of Error Analysis (Corder, 1967). This study compares the errors made by a learner while producing the Target Language (TL) with the Target Language form itself (Gass & Selinker, 2008). "In contrastive analysis the comparison is made with the native language, whereas in error analysis it is made with the TL" (Gass & Selinker, 2008, p.102). In order to account for the particular issue, Chomsky (1965) coined the well-known terms 'competence' and 'performance'. The aim of this division is to explain how learners master a language in a way that any speaker of the language can create and understand an infinite amount of discourse (Hughes, 2011). More precisely, "competence consists of the mental representations of linguistic rules that constitute the speaker-hearer's internal grammar" (Hughes, 2011, p.17). On the other hand, 'performance' consists of the use of this grammar in the comprehension and production of the language.

1.1.3 Social Interaction and Sociocultural Theory

According to Vygotsky (1978), language is developed entirely from social interaction and in supportive interactive environment. Cognition and thinking are socially rooted since learning is a process involving interpersonal interactions that take shape in a matrix of a cooperative context (Han & Bhattacharya, 2001). According to Gass (2002) the main focus is on the language learning context and how learners use their linguistic environment. Students are encouraged to be engaged in social interactions, develop their cognitive level and construct their own learning and knowledge. In the same light, learners can achieve upper levels of competence if they are provided with the necessary assistance ('scaffolding') by their teacher or classmates. In other words, learners can advance to a higher level of knowledge and performance reaching their own 'zone of proximal development' a fact that wouldn't be possible if they worked independently.

1.2 Methods and approaches for second language instruction

As the field of second language (L2) learning has developed over the past few decades, several reactions in methods and approaches to second language teaching have also been made. The attention on the presentation and discussion of grammatical rules has become less and less. The pedagogical emphasis was shifted to the socio- and psycholinguistic component and the primary function of L2 learning became oral or written interaction and communication. The Grammar Translation Method and the Audiolingual Approach which were based on the mother tongue, the repetitive drills and the grammar explanations were gradually replaced by the Natural Approach developed by Krashen (1981). Language acquisition has been the major objective and not language learning (Krashen, 1981). In short, the second language acquisition aims at "meaningful interaction in the target language - natural communication- in which speakers are concerned not with the form of the utterances but with the messages they are conveying and understanding" (Krashen, 1981, p. 1). Moving forward, the appearance of the Communicative Approach integrated learners to more real-life situations in order to prepare them for the real world. Learners were placed at the center of the learning process and their errors were seen as a natural part of the progression towards a greater understanding of the target language. Students' engagement is now considered a vital contributor to affect learners' achievement and therefore their enthusiasm and participation are one of the main teaching goals. A great attempt to encourage more spontaneity and to integrate unrehearsed situations in the classroom was gradually being made. Communicative goals were pursued in the classroom with the guidance and not control of the teacher. This Communicative Language Teaching (CLT) approach therefore aimed to encourage learners to use the language productively in real-life situations developing communicative competence. Fluency and accuracy are seen as complementary principles underlying communicative techniques.

1.3 Communicative competence

'Communicative competence' is a term coined by Hymes (1972) who considered that Chomsky's notion of competence was limited since it did not account for the social and functional rules of language. In fact, this new innovative notion came to enable us to con-

vey and interpret messages and to negotiate meanings interpersonally within specific contexts (Brown, 2000). After years of research and work on redefining communicative competence Canale & Swain (1980) and later Canale (2014) concluded with the following four different components of communicative competence:

1. Grammatical competence is "the knowledge of lexical items and of rules of morphology, syntax, sentence-grammar semantics, and phonology" (Canale & Swain, 1980, p. 29). In other words, this competence is associated with mastering the linguistic code of a language (Brown, 2000).

2. Discourse competence is complementary to grammatical competence since it is responsible for the sentence connection in stretches of discourse to form a meaningful whole out of a series of utterances (Brown, 2000). "While grammatical competence focuses on sentence-level grammar, discourse competence is concerned with intersentential relationships" (Brown, 2000, p.228).

3. Sociolinguistic competence "is the knowledge of the sociocultural rules of language and of discourse" (Brown, 2000, p.228). The social context and the roles of the participants on the function of the interaction are of great importance. "Only in a full context can judgments be made on the appropriateness of a particular utterance" (Brown, 2000, p.228).

4. Strategic competence is "the verbal and nonverbal communication strategies that may be called into action to compensate for breakdowns in communication due to performance variables or due to insufficient competence" (Canale & Swain, 1980, p.30). In other words, it is our ability to paraphrase, to make repairs, to shift register and style and to cope with misunderstandings through avoidance, hesitation and repetition.

1.4 Definition of Engagement and Motivation

Engagement and motivation are notions that have become major teaching goals throughout the years and have influenced greatly the teaching methods and techniques. They have been closely related to learner's performance and therefore have been described by many authors. For instance, Skinner et al. (1990) defined engagement as "children's initiation of action, effort, and persistence on schoolwork, as well as their ambient emotional states dur-

ing learning activities" (p. 24). Mosenthal (1999) mentioned that engagement "is grounded in the cognitive and affective systems of learners and readers" (p. 12). Student's engagement plays a vital role in student's academic achievement and explains various behaviors and attitudes in the classroom (Hirschfield & Gasper, 2011). It is known that learners are more likely to leave school when their engagement levels are really low (Archambault et al., 2009). There are three main features of student engagement in the learning environment (Skinner & Pitzer, 2012). The initial feature is that student engagement is considered a major condition for the learning process and that learners take part in classes both physically and cognitively. Secondly, the highly committed students consider themselves adequate in terms of academic achievement and as a result they develop social and psychological advancement. Thirdly, the more engaged the students are, the more academic achievements they have (Skinner & Pitzer, 2012). There are also several factors based on the bibliography that contributed to students' engagement. For instance, Handelsman et al. (2005), Dixson (2015) categorized student engagement into four factors which are skill engagement, emotional engagement, participation and performance engagement. Additionally, Hu et al. (2016) stated that learners' engagement has the following three dimensions; cognitive, behavioural and emotional engagement.

Motivation is vital for learners to increase learning performance and lack of motivation could be a major obstacle to learner's success. Based on theory there are two types of motivation: the intrinsic and the extrinsic. The intrinsic motivation arises from the desire to learn a topic due to its inherent interest for self-fulfillment, enjoyment and achieve a mastery of the subject. Students who are intrinsically motivated may eagerly engage in an activity because of a personal interest and internal pleasure (Csikszentmihalyi et al., 2005). Extrinsic motivation arises from the desire to perform a task as a means to an end, not as an end in itself (Ormrod, 2011). It is clear then that learners should be offered learning opportunities to develop their intrinsic motivation instead of the extrinsic. Factors that affect the intrinsic motivation can be fun, challenge, curiosity, control, and fantasy (Gopalan, 2016). Additionally, "motivation provides a source of energy that is responsible for why learners decide to make an effort, how long they are willing to sustain an activity, how hard they are going to pursue it, and how connected they feel to the activity" (Di Serio et al., 2013, p. 586). Positive attitude is therefore required to develop motivation for learning and achieve learners' engagement.

1.5 The Greek educational reality

1.5.1 Curricula used in the Greek educational system

Having described thoroughly the transitions of SLA throughout decades and pointing out the importance of achieving communicative goals and cultivating learners' engagement and motivation it is necessary to discuss the curricula followed in the Greek educational system. More precisely, private and public sectors follow different guidelines which are underlined by the same philosophy though. In fact, the Common European Framework of Reference (Council of Europe, 2001) guidelines are followed mostly by private language centers. According to this Curriculum, "language use comprises the actions performed by persons who as individuals and as social agents develop a range of competences both general and in particular communicative language competences" (Council of Europe, 2001, p. 9). More specifically, learners should develop all components of communicative competence that is grammatical competence (producing a structured comprehensible utterance including grammar and vocabulary), the sociolinguistic competence (having awareness of social rules of language, nonverbal behaviours and cultural references), strategic competence (having the ability to solve communication problems that arise) and discourse competence (producing coherent and cohesive utterances). In the same light, Pedagogical Institute (2003) followed by public schools, indicate that foreign languages should contribute to the development of the student's ability to respond to real communication situations, predictable or unpredictable, using linguistic, para-linguistic or even extra-linguistic options.

1.5.2 Syllabus guidelines

The present survey studies three different textbooks used in Greek public schools in order to achieve a more objective examination of syllabi. More specifically, all three textbooks are organised in the same way with separate modules where all four skills (speaking, listening, reading and writing) are practiced. In every module, learners have opportunities to practice vocabulary and grammar in separate sections through a number of tasks. It is worth mentioning that these tasks are mostly exam-oriented based on the format and the demands of the final exams that learners will take at the end of the year. For instance, they include

exercises such as gap filling, multiple choice, form sentences or questions and transform sentences (see Appendix I, p.82). All the exercises aim at practicing grammatical phenomena and lexical items taught on the specific unit. The tasks are organised and controlled by the teacher who has the role of the examiner.

1.5.3 Deficiencies

Despite the guidelines just mentioned, the teaching of vocabulary and grammar is not yet considered as process centered with communication goals and meaningful interactions in the target language. Instead, the major focus of textbooks used is the end product which will determine their success in the final examinations and the boost of learners' vocabulary knowledge through repetition and practice of lexical items. The main aim of the teachers in English as a Foreign Language (EFL) contexts is to provide learners with opportunities (mostly drill exercises and tests) to achieve high levels of lexical and grammatical acquisition in order to pass their final exams. As a result, learners are deprived from developing motivation and engagement in learning since it is a boring process of struggling to learn an excessive number of grammatical rules and lexical items. Thus, lessons cannot easily be intriguing and engaging since learners are not motivated to enhance their grammatical competence.

1.6 Implications for Second Language Acquisition

It is therefore high time teachers made some efforts to change this situation and adjust their teaching according to the recommendations and goals of the curriculum they follow even though the textbooks are not that helpful. Towards this aim, Information and Communications Technology (ICTs) and gamification can be proven more than useful and suitable since they have already received a great deal of attention in the field of second language acquisition (SLA), and every year an increasing number of teachers are using online gaming in their second language (L2) and foreign language classrooms. Teachers can manage to create a more communicative environment in the classroom and to provide learners with opportunities of genuine, real life and engaging learning experiences.

CHAPTER 2

2. ICTs in education

2.1 Defining ICTs

The term Information and Communication Technologies (ICTs) is an expression well spread in modern society nowadays and constitutes an integral part of our everyday life. ICT incorporates electronic technologies and techniques used to manage information and knowledge, including information-handling tools used to produce, store, process, distribute and exchange information (United Nations ICT Task Force, 2003). It refers to every device or application that can be used to have access, to connect, to assess, to create and to communicate information and knowledge (Carmona & Marin, 2013). The utilization of ICTs has permitted communities around the world to be connected to networks globally to make knowledge accessible to everyone (Krishnaveni & Meenakumari, 2010). In this context the term ICT literacy was developed, and people globally were forced to be considered as ICT literate. According to Panel (2002), there are five critical components of ICT literacy:

- *Access* - knowing about and knowing how to collect and/or retrieve information.
- *Manage* - applying an existing organizational or classification scheme.
- *Integrate* - interpreting and representing information. It involves summarizing, comparing, and contrasting.
- *Evaluate* - making judgments about the quality, relevance, usefulness, or efficiency of information.
- *Create* - generating information by adapting, applying, designing, inventing, or authoring information.

It is worth mentioning here that ICTs have not only generated a considerable impact in a single area or in a specific group of individuals but have also expanded and penetrated important areas such as the economy, education, medicine, among others, all this at a global level (Thornburg, 1999). The effect of ICT in education is of high interest and many researchers globally have dealt with it thoroughly.

2.2 ICTs in education

In a world that everything and everyone adjusts in the demands of the new digital era and the revolution of globalization, the integration of ICTs has led to a fast technological, social, political and financial transformation of the society which is therefore organized based on ICT (Castells, 2007). A field that was affected to a great extent by this change is education worldwide. Schools and universities mostly in developed countries have adopted the use of technologies in various academic subjects at all educational levels. Institutions, administrations, headmasters, educators, students and parents have faced many challenges to adapt in this new situation and have urged to measure up to the new demands.

To begin with, this introduction of ICTs into education has pushed for a change in the objectives and the desirous educational outcomes. As National Research Council (2000) reported "what is now known about learning is that it provides important guidelines for users of technology that can help students and teachers develop the competences needed for the twenty-first century" (p. 206). Thus, schooling in this digital age has been demanding and schools globally had to deal with this novel academic goal. Institutions and headmasters had to well-equip their schools to allow the integration of ICTs in their academic curriculum. For instance, some of the most important devices required for a well-equipped institution are computers, laptops, tablets, printers, digital cameras, projectors, smart whiteboards. Moreover, as far as the software is concerned staff and students should have access to document editors, search engines, social media and educational websites in order to be able to search, work, evaluate and lastly create material asked. Educators had to update their knowledge and their teaching methods to meet the digital needs. Students had to upgrade their computer skills and competences and learn how to work through computers, digital whiteboards and smartphones. Useful and helpful platforms have also been integrated in the learning process to make studying well-organised and accessible to everyone. Lastly, parents had to overcome their hesitations and fears towards this change and had to encourage their children to adapt and correspond in this new reality.

ICT has been therefore considered an important tool for educational change. The use of ICT has been integrated to educate people so that they can correspond to the needs and the demands of the twenty-first century. ICT is used to further traditional outcomes and contribute to the improvement of the performance of school. Introducing technological advanc-

es aims at ameliorating the teaching and learning quality and creating beneficial educational environments for students.

2.3 Theories underlying ICTs in education

2.3.1 Constructivism

One of the main theories that underlie ICTs in education is Constructivism. The integration of technologies meets the idea that "knowledge is socially constructed, rather than received or discovered" (Richards & Rodgers, 2001, p. 109). Learning is a process of meaning-making, not of knowledge-reception (Karppinen, 2005). In other words, it is an active process during which learners construct new ideas or concepts based upon their current/past knowledge (Bereiter, 2002; Driscoll, 1994). In fact, using technological tools, learners leave behind the passive role that they have had so far and participate actively in their own learning. They have the opportunity to ask questions, select and transform information needed to complete the final task, construct hypotheses, and make decisions, relying on a cognitive structure.

As the theory of constructivism supports, "rather than transmitting knowledge to students, teachers [should] collaborate with them to create knowledge and understanding in their mutual social context" (Richards & Rodgers, 2001, p. 109). The teacher's role is to facilitate the procedure and leave space and time to the learners to discover principles on their own. The main task of the teacher is to present information to be learnt to match the learners' current state of understanding. Learners are responsible for building their knowledge under the helpful guidelines of the teacher. Lastly, it is conceivable that "rather than seeking to cover the curriculum, learning focuses on the learners' experience, needs, interests and aspirations" (Richards & Rodgers, 2001, p. 109-110).

2.3.2 Gardner's multiple intelligences

Gardner's theory of multiple intelligences is also met through ICTs. According to Gardner (1999) there is a need for more personalised and diversified instructional experiences. To

obtain learning success, the following intelligences should be taken into account (Armstrong, 1994; Moursund, 1999).

- *Visual-Spatial* – The use of technology facilitates their learning since visuals, images and generally multimedia can stimulate and motivate their performance.
- *Bodily-kinesthetic* – Since this type of learners use the body effectively and like movement, the use of innovative technological tools may encourage them to use the body language and help their learning.
- *Interpersonal* – E-learning facilitates mostly these learners since they interact harmonically with others and learn through interaction, group activities and dialogues.
- *Linguistic* – These learners enjoy using words effectively, sharing stories and experiences. New technologies can encourage them express themselves and use linguistic items accurately and productively.
- *Logical-Mathematical* – These learners who enjoy reasoning and calculating can be intrigued since they are invited to construct their knowledge on their own and not just accept facts.

2.4 Beneficial impact of ICT in education

Much research has taken place to investigate and review the advantages of the ICT in education. Based on the numerous discussions and results it is evident that the benefits are important enough to make the integration of ICT into the classroom one of the top priorities. Firstly, a benefit worth mentioning is the opportunity of promoting a more collaborative learning environment. As Koc (2005) mentioned, using ICTs, students are enabled to communicate, share, and work collaboratively anywhere, any time. They have the chance to interact with peers or experts from different fields from different countries and cultures and therefore develop significant skills such as teambuilding, communication and global awareness. Also, the urgent and unprecedented situation of the pandemic has provoked a number of consequences and new demands. Lessons have been organized online to overcome the proximity restrictions forced by the healthcare institutions. The use of ICTs has contributed to minimize this distance. Thus, learners have urged to deal with a new way of learning that broadened their horizons and made them more familiar and competent with their digital skills.

Furthermore, the introduction of ICTs in education facilitates the support of student-centered and self-directed learning (Fu, 2013). "They build new knowledge through accessing, selecting, organizing, and interpreting information and data" (Fu, 2013, p. 6). Learning through ICTs becomes more active, and learners learn as they do. Students have the opportunity to work on real-life problems, making learning less abstract and more relevant to the learner's life situation (Pelgrum & Law, 2003). In this way, and in contrast to traditional learning, they use information and data from a variety of sources, critically assess the quality of the learning materials and choose what to learn.

Another advantage of ICT integration is the production of a creative learning environment. ICT learning encourages the manipulation of existing information and the creation of real-world products rather than the memorization of received information (Tinio, 2003). The great variety of applications and options offered by new technologies allow students to find many innovative ways to meet their different learning needs and inquiries. Students can therefore work in a more creative learning environment where they can develop their skills more productively.

In addition, a continuous exposure in the ICT environment has proven to be beneficial in developing higher critical thinking skills and therefore providing an evaluative learning process. Mcmahon's (2009) study showed that there were statistically significant correlations between studying with ICT and the acquisition of critical thinking skills. Following the constructive learning approach, educators engage students to higher-level concepts and projects through ICT in which they are asked to search, find, evaluate and construct knowledge more critically. ICTs allow learners to explore and discover rather than merely listen and remember (Tinio, 2003).

Last but not least, technology-based learning encourages the development of the integrative approach. "This approach eliminates the artificial separation between the different disciplines and between theory and practice that characterizes the traditional classroom approach" (Pelgrum & Law, 2003). Thus, knowledge from different subjects can be integrated into the learning process giving a more holistic perspective of learning.

2.5 Limitations of ICTs in education

Although the benefits of integrating ICTs into education have been clearly demonstrated, barriers associated with its use exist. There are several limitations from different perspectives: the administration's, the teacher's and the student's. It is considered necessary to examine thoroughly this variation to come to more accurate conclusions and apply more wisely the technology-based education.

To begin with, as far as the administration's perspective is concerned, there are barriers related to the availability of ICT materials within a school. According to British Educational Communications and Technology Agency (2004) the inaccessibility of ICT resources is not only about how often hardware or software are provided by an institution but also it is about the poor organization of resources, poor quality hardware and inappropriate software. It is widespread that schools worldwide have lack of technological equipment and appropriate course content and instructional programs (Yildirim, 2007). As a result, teachers are discouraged to follow the demands of this new digital era and stuck in the traditional methods.

One of the commonest limitations that teachers face when they desire to schedule a technology lesson is the lack of time (Bingimlas, 2009). As Sicilia (2005) reports, teachers have difficulty in using ICTs because they need time to explore the different Internet sites, look at various aspects of educational software, practice using the new technologies and tackle with any technical problems. Living in the fast-paced everyday life, teachers must overcome this challenge of time to manage to adopt a more technology-based education. Apart from this limitation, educators have also to face the lack of effective training. According to Pelgrum's (2001) study there are not enough training opportunities for the teachers as far as the use of ICT in a classroom environment is concerned. A great number of educators, especially the old ones, do not feel confident users of computers and as a result they avoid planning a computer-based lesson and insist on providing a more traditional way of teaching. In addition, assuming that there is some expertise in technology use, teachers have to face the challenge of integrate it fruitfully following methodologies and strategies that underlie the ICT use.

Concerning the student's perspective, there is a great number of families that cannot support either the technological equipment at home or the ICT literacy of their kids. Therefore,

many learners lack of technical skills that can facilitate their learning and have difficulties in dealing with the new technological materials.

CHAPTER 3

3. Gamification

3.1 Defining gamification

The very term of gamification urges us to first examine what we mean by the term game and specifically what are the special characteristics of games. Nick Pelling was the first who tried to define the term gamification. In 2003, the computer programmer stated that "game-like accelerated user interface design [can be applied] to make electronic transactions both enjoyable and fast" (Pelling, 2011, 2014). However, this term was not widely used for some years and as a result it disappeared. In 2008, Terill (2008) changed the term and renamed it as "Gameification" and used it in BlogSpot on social gaming. He defined it as "taking game mechanics and applying to other web properties to increase engagement" (Terill, 2008). Two years later, in various fields such as marketing, consultant companies, software development companies and government organisations the term gamification was adopted again and was widely used and described as "the idea of using game-thinking and game mechanics to solve problems and engage audiences" (Zichermann & Cunningham, 2011, p. 9). That time, gamification was also described as the "use of game elements and game design techniques in non-game contexts" (Deterding et al., 2011, p. 2; Werbach & Hunter, 2012, p. 25). However, Werbach (2014, p. 268) attempted to overcome the infelicities of previous terms and gave a new definition of "making activities more or less game-like" and highlighted that gamification is an ongoing process and not the end product. Lastly, the most recent attempt was made by Sailer et al. (2017, p. 372) who defined gamification as "the process of making activities in non-game context more game-like by using game design elements". All in all, taking into consideration the long journey of defining this term, we can conclude that gamification is "the practice of using game design elements, game mechanics and game thinking in non-game activities to motivate participants" (Al-Azawi et al., 2016, pp.133-134).

3.2 Game elements

The elements that we can find by analyzing the various games are very many, but there are some that we meet very often in various games and especially in social games on the Internet or other electronic games. Werbach and Hunter (2012) organized game characteristics into three levels, as **Figure 1** shows: Game dynamics, Game Mechanics, and Game components. Below we analyze the elements included in each level, according to Werbach and Hunter (2012).
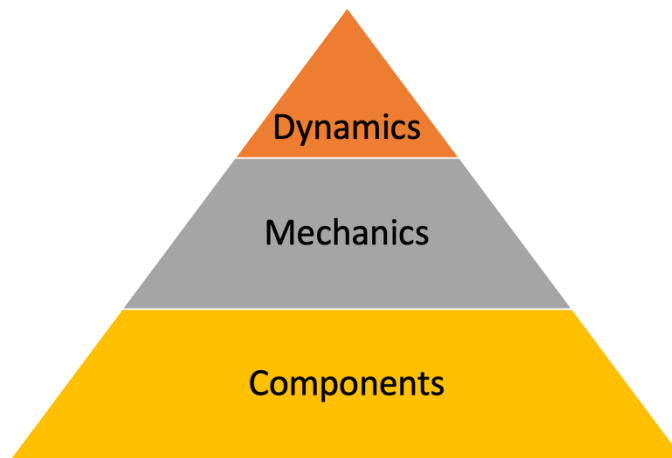
Figure 1. *A hierarchical framework of game elements (Werbach and Hunter, 2012).*

3.2.1 Game Dynamics

Game Dynamics refers to the top-level features of games. These elements govern games but are not immediately apparent, as they are the most abstract, hidden structure of a game. Game dynamics include the following elements:

A. *Constraints*: Constraints are necessary to limit the freedom of the player, thus forcing him to make certain choices and solve the problems that arise.

B. *Emotions*: Games can produce a wide variety of emotions, such as excitement, anticipation or sadness. In the case of gamification, we avoid some of these emotions, such as anger, because in most cases it would not benefit our goal. But there are feelings like satisfaction, joy and encouragement that really create an environment in which the player wants to engage more. But we must keep in mind that not all players react in the same way, and that an element of the game that frustrates one player may be an impetus for competition for another.

C. *Narrative*: Refers the plot of the game, which helps to connect and unify the various elements of the game, as well as generate the interest and engagement of the player. In the case of gamification, there is no possibility of replicating the range of aesthetic effect that video games offer in order to enrich their plot. But there are techniques that can help the gamification have a flow. Such techniques are consistency in aesthetic choices or paralleling plots that may already be familiar to players. The absence of a plot runs the risk of making the gamification feel like a random use of individual elements.

D. *Progression*: A player's sense of evolving within the game, of gradually progressing and improving, gaining more experience and skill, is a factor that encourages greater player involvement in the game.

E. *Relationships*: A player's interaction with his friends or other players (even virtual ones), in the form of cooperation or competition, constitutes the social dynamic of a game and greatly affects participation in a game.

3.2.2 Game mechanics

In the middle of the pyramid is Game Mechanics. Engineering includes the processes that help the game evolve. Each element of Game Mechanics is linked to one or more elements of Game Dynamics. The elements belonging to Game Mechanics are the following:

A. *Challenges*: These are the goals the game sets for the player in order to motivate them to act.

B. *Chance*: The random event, unrelated to the player's activity, that arouses the player's curiosity and puts them in a state of anticipation, both about the outcome and when it will happen again.

C. *Competition*: Often arises spontaneously depending on the structure of the game and is related to the idea that one player (or one team) loses while the other wins.

D. *Cooperation*: It is the other side of the coin, as far as competition is concerned. Players band together to achieve their common goal and beat another team.

E. *Feedback*: The ability to inform the player directly about his performance is a very important factor in his motivation.

F. *Resource acquisition*: As players become more efficient, the game offers them additional resources, which make it easier to achieve their new goals.

G. *Rewards*: Upon completing a task or achieving a goal, the game offers a reward to the players, in the form of the reward.

H. *Transactions*: The exchange of game resources between players.

I. *Turns*: The rotation in which players participate in the game.

J. *Win states*: The condition that defines a player as the winner.

3.2.3 Components

At the last level of the pyramid are the components. Components refer to more specific characteristics of games, which we can use to create the more abstract elements of games that comprise the previous two levels of Dynamics and of Game Mechanics. The components are the most in number and for this reason they are at the base of the pyramid. According to Werbach and Hunter (2012) we have fifteen important components:

A. *Achievements*: The payoff for specific goals that the player has achieved.

B. *Avatar*: A player's virtual profile.

C. *Badges*: Visual representations of achievements.

D. *Boss Fights*: Very challenging objectives towards the end of a level.

E. *Collections*: Collection of various virtual objects or tokens signals.

F. *Combat*: A fixed and usually short encounter.

G. *Content Unlocking*: Some achievement or successful completion of a level can give the player access to material that will facilitate his/ her work later.

H. *Gifting*: The ability for a player to share resources with other players.

I. *Leaderboards*: Visual representation of a player's progress in relation with the progress of other players.

J. *Levels*: Defined levels of a player's progress.

K. *Points*: Numerical representation of a player's progress.

L. *Quests*: Predefined challenges with specific objectives and fees.

M. *Social graphs*: Display of players with whom one player can cooperate or play against them.

N. *Teams*: Groups of players working together towards a common goal.

O. *Virtual goods*: Players own other virtual resources that own or even real money in order to acquire them some virtual goods.

3.3 Theory of Flow

Apart from the dynamics, the mechanics and the components mentioned above, there are important games to provide users with positive experiences that allow them to be fully engaged. The designer's aim is to organise the game in that way that will guide users to a state called "Flow". Csikszentmihalyi (1975) discussed the state of "Flow" as a psychological concept where users are so immersed in an optimal gamifying activity that they may lose track of time and feel fully engaged. In other words, it is "a state where a person is voluntarily participating in an activity with commitment, without the feeling of being forced or coerced into participation" (Marczewski, 2018). As Chantzi et al. (2013) claim in order state of flow to be achieved the offered task should be as challenging as the player's skills. Otherwise, high levels of anxiety are noticed and therefore players tend to quit the game, feel boredom and eventually fail to be engaged. According to Csikszentmihalyi & Csikzentmihaly (1990) people described their optimal experience to be comprised of at least one of the following eight components:

1. *Challenging activity that requires skills*. There should be an equilibrium between the personal skill and the challenge of the task in order to achieve the state of flow.
2. *Clear goals*. Users should feel confident that they understood the goal they have to achieve in order to be engaged.
3. *Immediate feedback*. When players have immediate feedback of their performance, they are allowed to evaluate it and improved it in order to achieve the desired goal.
4. *Merging of action and awareness*. Being in flow, the player becomes fully engaged in the task and performs automatically and spontaneously.
5. *Loss of self-consciousness*. While playing the game, users need not to worry about themselves and be able to lose their self-awareness.
6. *Concentration on task at hand*. To achieve the state of flow users should be fully focused on the task and not be distracted by other thoughts.
7. *Transformation of time*. Players experience optimal flow when they lose track of time, or their perception of time is distorted.
8. *Paradox of control*. Once the users reach the state of flow, they would me more motivated since they would develop the belief of having the control of their actions.

3.4 Gamification in education

Gamification has received a lot of interest the last years since it has successfully been integrated in medical, marketing, social, business and more recently learning environments. The last decade online gaming is a popular trend not only amongst teenagers but also amongst adults. There is a great variety of online games for all tastes and for all ages that users play daily. It is considered one of the most famous ways of entertainment worldwide. For this reason, gaming in education has been integrated successfully as an innovative technique with beneficial results on the learning process. Gamification techniques leverage people's natural desires for competition, achievement and self-expression. By adding game elements such as points, levels, leaderboards, badges and challenges in a syllabus the learning process can become a more joyful and fun experience with increase of learners' motivation and engagement. According to Al-Azawi et al. (2016), fun in an education game can be classified into the four types. Firstly, when a goal is achieved by a learner which is the basic fun in the game. Secondly, when fun is the intellectual feeling which occurs at the time of an unpredictable happening. Thirdly, when a learner is challenged to solve or deal with a demanding problem in order to achieve a difficult goal. Finally, when there is the feeling of satisfaction when a learner receives a praise or a badge.

It is believed that gamification in education can have better learning effects than traditional lecture instruction, producing higher levels of learning motivation. Learning is not just seat time but extends across multiple contexts, experiences and interactions. The focus of old teaching methods is basically on the exams rather than trying to consolidate the main concepts of the subject matters. "So, there arises a need to let the students learn in their own ways, rather than focusing on the exams without understanding the subject matters" (Al-Azawi et al., 2016, p. 132). The gamified learning experience invite students to participate in scenarios that will allow them understand topics or subjects which in a traditional instruction will be considered unattractive, difficult or boring. Furthermore, the participation in a gamified lesson can provide learners with educational contexts with clear tasks and immediate feedbacks or rewards. "Games allow repeated failure, and after each failure, the student learns something new. In this way, students can learn from their mistakes while taking failure and the negative experiences in a positive and meaningful way" (Nah et al., 2013, p. 102). Therefore, mistakes are considered a very useful and fruitful part of the

learning process. Lastly, gamification in education encourages learners to explore their knowledge more autonomously and independently and therefore participate more actively in the learning procedure. The addition of interactivity and competition in the learning process can help learners be more engaged and more productive, can promote problem-solving ability, and can eventually result in achieving lifelong learning.

3.5 Gamification and L2 learning

Educational games are different from entertainment games, since "their primary purpose [is] to educate and train the player" and their "entertaining quality is rather used as a vehicle to support learning" (Hartmann & Gommer, 2021, p.1). This belief is getting more and more vulgate in L2/FL learning environments and therefore researchers and teachers worldwide examine its impact on L2/FL contexts. There are numerous positive results in a meta-analysis of gamification for FL/L2 education (Garland, 2015) as many L2 theories are met through the integration of gamification.

To begin with, a very essential link between L2 learning and gamification can be found in Vygotsky's (1978) learning theory of the Zone of Proximal Development (ZPD). Gamification is closely linked to Communicative Language Teaching (CLT) principles such as careful scaffolding and progression of authentic content, and captivating and relevant narrative stories (Apostol, Zaharescu, & Alexe, 2013). Language acquisition is achieved more when learners perform tasks in the target language and when students play an active role, learn from each other, and interact with each other. As described in Vygotsky's (1978, p. 86) zone of proximal development, students are encouraged to develop from their existing knowledge and acquire new knowledge through guidance from adults or more able learners. In the same light, according to Krashen (1982) language acquisition happens when our boundaries of understanding are continually pushed "a little beyond where we are now" (p. 21). The integration of gamification provides learners with opportunities to push their boundaries edging them toward their own zone of proximal development. As a result, it seems clear that games could work well to promote a positive attitude toward L2 learning.

Additionally, another connection of gamification with L2 language learning is Dornyei's (2014) L2 motivational self-system and more particularly, the situation-specific motives related to the immediate learning environment and experience. "Motivation is a star player

in the cast of characters assigned to FL/L2 learning scenarios around the world" Brown (2006, p.226). As Dornyei (2014) suggests creating motivation in a FL/L2 learning environment it is necessary to use more strategies than just rewards and punishments and instead of quantity to invest in a few well-chosen high quality motivational strategies. To be more specific, game elements like control, curiosity, fantasy and challenge and the use of a timed reward system to reinforce motivation may contribute to a greater student involvement in learning the language (Danowska-Florczyk & Mostowski, 2014). Moreover, via achievements and immediate feedback, learners can have the feeling of actually building something great and can focus on specific parts of language skills for further improvement. Lastly one important underlying theory of gamification is the theory of Flow by Csikszentmihályi (1975), as discussed in section 3.3. In language acquisition literature, Krashen's (1982) Forgetting Principle comes close to the Csikszentmihályi's (1975) Flow state experience. More precisely, interesting and motivating language input leads foreign language students to focus on the content, not on the form, in such way that they may even forget that the message is in the target language. This is very similar to the state of Flow, in which students are fully engaged in an activity.

3.6 Gamification tools

In this section the two gamification tools used in the study are described thoroughly. Kahoot! and Quizlet are two famous gamification platforms that gain ground in the educational field and are very popular options of the EFL teachers.

3.6.1 Kahoot!

Released in September 2013, Kahoot! is one of the most popular game-based learning platforms with over 2.5 billion users from more than 200 countries globally (Vick, 2019). It is based on the Lecture quiz and its aim is to offer an alternative learning experience, to keep learners' motivation and engagement high and therefore achieve positive learning outcomes. More particularly, it is a "game-based learning platform used to review students' knowledge, for formative assessment or as a break from traditional classroom activities" (Wang & Tahir, 2020, p.1). It is also described as a game-based student response system

(GSRS) that transforms the classroom into a game show where the game show host is the teacher, and the contestants are the learners (Wang, 2015). In fact, the instructor designs interactive quizzes integrating images, videos or even surveys and adapting each time the pace of the play. The questions are displayed on a big screen to be obvious to the whole classroom. Students respond to the questions using their own digital device in order to collect points and become the winner of the game show. The points are collected not only by giving the correct answers but also by answering fast. Points are displayed on the screen as in game shows and learners anticipate checking their position on the leader board hoping to be on the top.

The advantages of Kahoot! are multiple and provide instructors with various options to create a great learning experience. To begin with, registration and usage is for free and therefore there is no financial burden. It is easy for instructors to learn and to use and as a result they are not discouraged to discover its potentials. In addition, since there is no need to have an account to register or to download an application, learners can follow a simple process to participate. Furthermore, there is no restriction as far as the compatibility is concerned since users can use various devices such as smartphones, tablets or computers. What is more, teachers can create discussion questions, surveys or quizzes that learners can take multiple times. Also, instructors can download, review and save learners' result in order to adjust their teaching process based on their needs. Last but not least, Kahoot! provides anonymous participation in a learning environment and allows learners to feel safer when they take a quiz and respond to questions (Licorish et al. 2017).

Since its release there have been an increasing interest from the part of the researchers and many surveys have been conducted to study its impact and efficiency. Wang and Thair (2020) came to the conclusion that Kahoot! can have "a positive effect on learning performance, classroom dynamics, students' and teachers' attitudes, and students' anxiety (p.1). It is a learning tool that enhances enthusiasm, encourages students to participate, and facilitates the gain of information (Navarro, 2017, p.256). Additionally, as Merino et al. (2020) stress out, Kahoot! allows students to consolidate vocabulary learning in the English classroom since the most effective way to present vocabulary is through cloze activities, quizzes, questions and word order as Kahoot! offers. Furthermore, Bergin and Reilly (2005, p. 294) were actually in favor of the use of the platform since "the use of games to promote students' learning has been done to capture students' interest as all of us learn better when we are motivated". Lastly, it is interesting to point out that according to Zarzycka-Piskorz

(2016, p. 18), the use of Kahoot! can be beneficial since it "creates a context in which co-operation as well as autonomy can be observed".

3.6.2 Quizlet

Quizlet was released in 2005 and it is considered an innovative learning tool especially designed for learning vocabulary. It is defined as an "online learning teaching community platform in which teachers can create their classes and manage the tasks by tracking progress of learners" (Toy & Büyükkarci, 2019, p.47). In fact, it is "a mobile and web-based application which utilizes learning modules composed of concepts and their definitions or descriptions" (Montaner-Villalba, 2019, p. 305). More specifically vocabulary or language units are "introduced to learners through various learning modes which include flashcards, games, collaborative tasks, and quizzes that help learners master different learning topics" (Montaner-Villalba, 2019, p.305). In fact, the platform provides users with two categories: Study and Play. In Study, you can find five modes (Learn, Flashcards, Write, Spell and Test) where you can get familiar with the sets, learn with the use of digital flashcards, write and practice spelling and lastly test your knowledge. In Play, you can find three modes (Match, Gravity and Live) where you can match terms, play with meteors and participate in online collaborative activities.

Quizlet gains ground the last decade as it gives various benefits to its users. Firstly, it is available for iOS and Android so users can have access to it anywhere and anytime. Furthermore, it is designed to "meet the needs of autonomous learners, since they can perform different learning tasks, assess their vocabulary, acquisition, and gamify the vocabulary learning process" (Sanosi, 2018, p.76). In addition, learners can receive a mark after each session and therefore they can check their progress and work more on their weakness. Teachers can also benefit from that since their can check learners' progress and adjust their teaching to meet their needs. Lastly, the availability of L1 translations can make the platform more helpful and can encourage learners to work more independently.

This massive preference of the teachers for Quizlet has attracted the attention of many educators and researchers who have conducted surveys to measure its significance for vocabulary learning. More specifically, Toy and Büyükkarci (2019) came to the conclusion that Quizlet "increases the students' achievement for vocabulary learning, particularly regarding word recognition" (p.44). In addition, Vargas (2011) discussed thoroughly the benefits of

the platform on kinesthetic learners who perform well on testing. Lastly, Kálecký, (2016) discussed about the advantage of having autonomous learners who can control their progress and work on the vocabulary parts that lack.

3.7 Relevant research on gamification

An examination of the literature reveals that there are several studies where students have been exposed to educational concepts using online gamification. Firstly, a survey known as MathLand, was conducted by Kate Fanelli to study the way special education students at high school learn maths (Ross, 2010). The research used the gamification tool MathLand which is simple in its components, objectives, and implementation. The results showed increased test scores and classroom attendance during the three-year survey. They also demonstrated the effectiveness of gamification in increasing long-term student engagement. Another implementation of classroom gamification is ClassRealm conceived by Ben Bertoli (2012) as a way to motivate his students to read more. Bertoli has discovered that the use of gamification has had an important effect on student engagement and motivation. Bertoli claims that "[he] could hardly get my students to free write when it was mandatory" (Bertoli, 2012), but through the application of gamification, he was able to transform his students from passive participants into engaged learners. Moreover, in a study conducted by Lee et al. (2004) second-grade students were given access to a computer-based math facts game instead of receiving paper worksheets (as cited in Dondlinger, 2007, p. 22). In this study it was found that the use of gamification resulted in interactive learning for the students.

However, there are surveys with not so positive results. For instance, in the study conducted by Rosas et al. (2003), elementary students were given a Gameboy-like device which taught them language and communication concepts using a custom software suite. In a second study conducted by Annetta, Minogue, Holmes, and Cheng (2009) biology was taught through the use of an internally developed Multiplayer Educational Gaming Application. In both researches there was no evidence that playing the game individually resulted in improved learning when compared to students who played in groups. In Markey and Leeder (2011), Bibliobouts, an online information literacy game, was introduced to college students in order to challenge them to collect, submit, and evaluate literary sources. The re-

searchers discovered that students would exploit weaknesses in the Bibliobouts game to outperform their peers, thus suggesting that some students were more concerned with winning than in learning.

3.8 Educational benefits of gamification

To begin with, gamification in education can be used as research and/or measurement tool. It can be seen as an efficient way to measure massively a subject matter and use the results on the benefit of the students. Gamification is considered a methodology that helps improve the results of the teaching/learning process, responding to students' educational needs. Educational games can also attract the participation by individuals across many demographic boundaries (e.g., age, gender, ethnicity, and educational status). There are activities that can eliminate the participation of some students who may feel restricted or uncomfortable to take part in. Another benefit worth mentioning is the fact that gamification can assist children in setting goals, ensuring goal rehearsal, providing feedback, reinforcement, and maintaining records of behavioral change. Classroom activities and especially worksheets cannot guarantee that learners will become more organized or use wisely the results of their performance. Also, games may help in the development of IT skills since they are asked to use online platforms on a regular basis through digital devices.

Furthermore, educational Games can be useful, as they allow the instructor to measure performance on a very wide variety of tasks, and can be easily changed, standardized, and understood. Moreover, as Figueroa (2015, p.50) claims "the use of gamification in L2 learning contributes positively to the learning experience" since "it helps L2 learners in plenty of personality factors". For instance, Games can be used when examining individual characteristics such as self-esteem, self-concept, goal- setting and individual differences. The most important advantage that make educational Games a popular learning trend is the fact that they are fun and stimulating for participants. Consequently, it is easier to achieve and maintain a person's undivided attention for long periods of time. Zainuddin et al. (2020) believe that "the adoption of gamification in learning and instruction is perceived to have mass appeal among the learners in stimulating motivation, learner engagement and social influence" (p.1).

3.9 Challenges and considerations of gamification

Apart from the benefits mentioned above, there are some barriers that can impede the integration of online gamification in education. One of the most common challenges is the fact that although gamification as become a popular educational trend, teachers are not yet familiar with its use. They do not feel confident to flourish their teaching procedure following a gamified lesson plan. In addition, they think that designing gamified lessons, they may create a competitive learning environment and as a result learners may be discouraged and unmotivated to participate. The main reason for having such an attitude towards gamification is the fact that there is lack of guidance and lack of detailed guidelines for designing and implementing gamified activities (Cheong et al., 2014). Even though there are some frameworks for gamification design, they do not seem to "take into account some necessary keys to get a more effective gamified process for success" (Mora et al., 2015, p. 6).

Another challenge that needs to be faced is the fact that teachers do not actually believe that gamified lessons can be a helpful educational tool. In fact, as Zainuddin et al. (2020, p.12) claim, teachers might think that "the simple use of extrinsic motivators, such as virtual trophies or achievement points, does not always guarantee that students will care or be more engaged". As a result, they prefer keeping their lesson closer to traditional methods of teaching not trying to create an engaging learning experience. Another fear of using online gamification in the classroom is the time constraint, the unreliable Internet connection, the students' concern of losing, and the fact that they can also guess the answers (Wang & Tahir, 2020).

CHAPTER 4

4. Methodology

4.1 Nature and purpose of the study

As it was mentioned in section 1.5, educational institutions in Greece offer mostly exam-oriented opportunities to learners to practise the target language. More specifically, the tasks that practise their grammatical competence are designed based on the criteria and the demands of various examination formats without meeting any of the communicative principles mentioned in the curricula (see section 1.5). As a result, learners are rarely exposed to communicative experiences and tasks and therefore they hardly participate and do not feel engaged. The English lesson at school is a boring experience for them with no motivation. It has been proven in various previous research studies that the integration of online gamification can overcome this difficulty and allow learners to develop their skills through motivating learning experiences with high levels of engagement (see section 3.7). However, it is necessary to note that all the results and the outcomes derived from this relevant research come from the perceptions of the educators. A great number of surveys were conducted based on teachers' opinions on integrating gamification into their teaching process. Thus, it is of high importance to examine learners' perceptions on how beneficial they think gamification is. In other words, it is essential to investigate learners' acceptance of online gamification, learners' perception on how motivation and engagement is enhanced and how their performance has been improved through gamified lessons.

To examine learners' perception the approach of case study was chosen. According to Richards (2003), the focus of this type of research is on a particular case or set of cases and the aim is to provide a meticulous description of the case(s). Furthermore, in a case study the institutional setting where the research takes place is carefully delineated and the background of the participants is discussed analytically (Richards, 2003).

The expected outcome of the particular case study is that the attitude of students towards gamification influence their engagement either regarding skills or participation/ interaction

in the lesson. Also, it is expected to prove that learners are more prone to accept gamification if they perceive that gamification is easy to use and useful to their learning. Last but not least, it is expected to come to the conclusion that students are more engaged during gamified lessons and therefore their performance is improved.

4.2 Research questions

As it was mentioned above the purpose of this dissertation is to examine the perception of students on the application of online gamification in EFL contexts to enhance their engagement on the development of grammatical competence. The research took place in the Greek EFL context and examined more critically the learning process in Greek schools. The questions that this research sought to answer are the following:

1) Does perceived usefulness influence the students' attitude towards using gamification technology in learning?
2) Does perceived ease of use influence the students' attitude towards using gamification technology in learning?
3) Does perceived usefulness influence the students' engagement (skills engagement, interaction engagement)?
4) Does perceived ease of use influence the students' engagement (skills engagement, interaction engagement)?
5) Does students' attitude towards using gamification technology influence the students' engagement (skills engagement, interaction engagement)?

4.3 Research method

According to Paraskevopoulos (1993), scientific research aims at the systematic study of empirical reality, in order to discover new knowledge, through impersonal objective analysis. Methods such as questionnaires, observation or assessment tests are used to collect empirical data. The results of the research, that can be considered objective knowledge but not final, are formulated in a written study and are available to anyone who wants to make use of them.

Conducting successful research requires the use of data collection instruments that can reassure quality, accuracy, and validity of the findings. Towards this goal a quantitative research method was adopted in this study. Quantitative research gathers numerical data which can be ranked, measured or categorized through statistical analysis. It assists with uncovering patterns or relationships, and for generalizing. This type of research is useful for finding out how many, how much, how often, or to what extent. Therefore, a questionnaire was designed to reach to accurate and valid results. According to Dornyei (2007) in the social studies the questionnaire is considered one of the most popular research instruments. Furthermore, according to researchers the main strength of questionnaires is their efficiency in terms of researcher time, researcher effort and financial resources.

4.4 Survey instrument

To measure students' engagement a questionnaire based on the Gamification Acceptance Model (GAM) developed by Ahmad et al. (2018) was used (see Appendix II, p. 85). This questionnaire was developed based on Student Course Engagement Questionnaire (SCEQ) by Handelsman et al. (2005) and the Technology Acceptance Model (TAM) by Davis et al. (1989). It consisted of 21 items which were: Gamification Perceived Usefulness (GPU) (4 items), Gamification Perceived Ease of Use (GPEOU) (4 items) and Attitude towards using Gamification technology (AT) (3 items), Skill Engagement (SE) (3items), Interaction Engagement (IE) (4 items) and other 3 items covered the demographic data of the students which is the gender, age, and nationality. All 18 items used a 5-point Likert scale option ranged from 1 (Strongly disagree), 2 (Disagree), 3 (Neutral), 4 (Agree), and 5 (Strongly Agree).

4.5 Participants

The current study took place in the public junior high school of Kassandra in Chalkidiki. It is a multicultural secondary school where students are from different origins. The participants are 70 teenage students who have similar cultural and social status. In the survey 36 boys and 34 girls took part as it is observed in Table 1.

Table 1. *Gender*

	Counts	% of Total
Male	36	51.4 %
Female	34	48.6 %

In Table 2 it is indicated that the participants of this study were between the age of 12-14. It is observed that most of the participants are at the age of 12. That means that the majority of the subjects are in the first grade of Junior High School.

Table 2. *Age*

	Counts	% of Total
12 years old	27	38.6 %
13 years old	18	25.7 %
14 years old	25	35.7 %

Table 3 depicts the nationalities of the students. More specifically, the majority of the students have Greek origin while 30% of them are Albanian. There are also few students from other countries such as Ukraine, Romania, and China.

Table 3. *Nationality*

	Counts	% of Total
Greek	42	60.0 %
Albanian	21	30.0 %
Chinese	2	2.9 %
Romanian	2	2.9 %
Ukraine	3	4.3 %

4.6 Research Procedure

At the beginning of the survey, a short introduction was given to the students regarding the use of the new technology in the classroom. The online games chosen were Kahoot! and Quizlet described in sections 3.6.1 and 3.6.2. These gamification tools were presented and described to the participants to get familiar with the interface and the rules. This initial stage lasted one week, and two academic hours were spent for each class. The gamified lessons took place in the school lab where each student had a computer on his/her own and there was a projector used by the instructor. During this week learners had the opportunity to get informed and test their understanding.

During the next two months the English lessons were organized based on gamified lesson plans. Every week each class had two one-hour English lessons. At the first academic hour, students were introduced to the main vocabulary of the unit through Quizlet. To do so, units in Quizlet were created based on the topic of each unit. In this activity, students were shown flashcards on the screen with the new vocabulary, and they had to try to explain their meaning. Once they tried to guess the meaning, they were given the correct definition, which was on the other side of the flashcard, to check whether they had done it correctly. After that, they were asked to practice the new vocabulary by selecting the "Learn" option in Quizlet, which is a multiple-choice and fill-in the gaps activity about the target words. The link to this Quizlet unit was also uploaded to e-class so that students could practice the target words at home. During the second academic hour, learners had the opportunity to revise and consolidate the vocabulary by playing different games that Quizlet offers. For instance, the option "Match" lets students match the correct combination of every term with its definition. They were given extra time if they made a mistake. A second game, called "Checkpoint", asked them to practice the vocabulary in the form of a fun quiz. The third game called "Classic Live" was more collaborative and competitive game among students. Figure 2 presents two indicative screenshots of the Quizlet activity "Match".
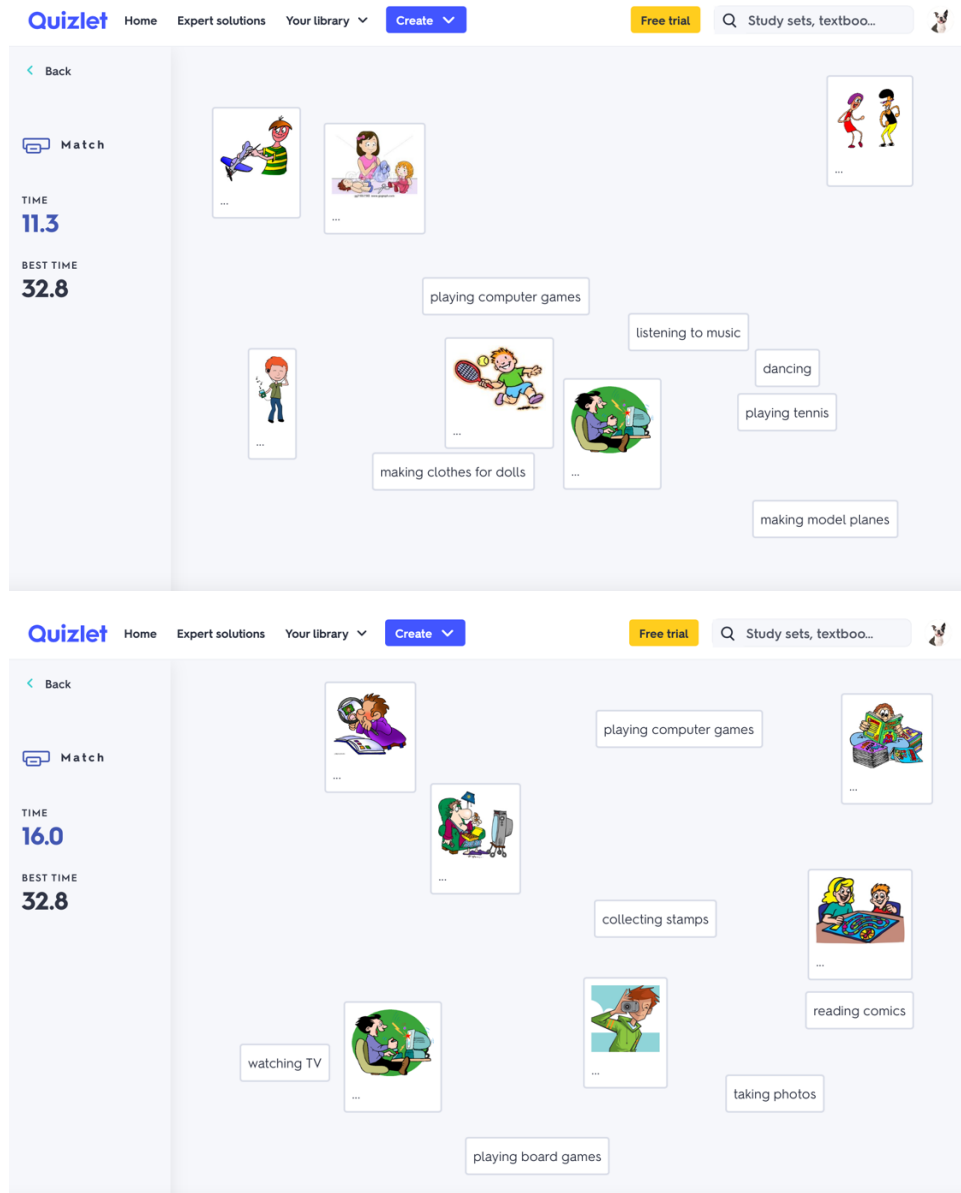
Figure 2. *Screenshots of the Quizlet activity "Match".*

After a unit was completed, a pop quiz using Kahoot! (Figure 3) was held to assess the students understanding before going to the next unit. Each Kahoot! quiz had 20 questions created by the teacher. The content of the questions was based on the vocabulary taught via the Quizlet platform or the grammatical items found in the unit. Learners using the school's computers had 15' to answer each question which were projected on the lab's whiteboard. Between each question, students could check their scores and position in the game in relation to their classmates. The results were based on the number of correct answers and the time spent to answer each question. There were two formats of questions, multiple choice

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and true or false. At the end of the quiz there was a winner who had collected the most points.
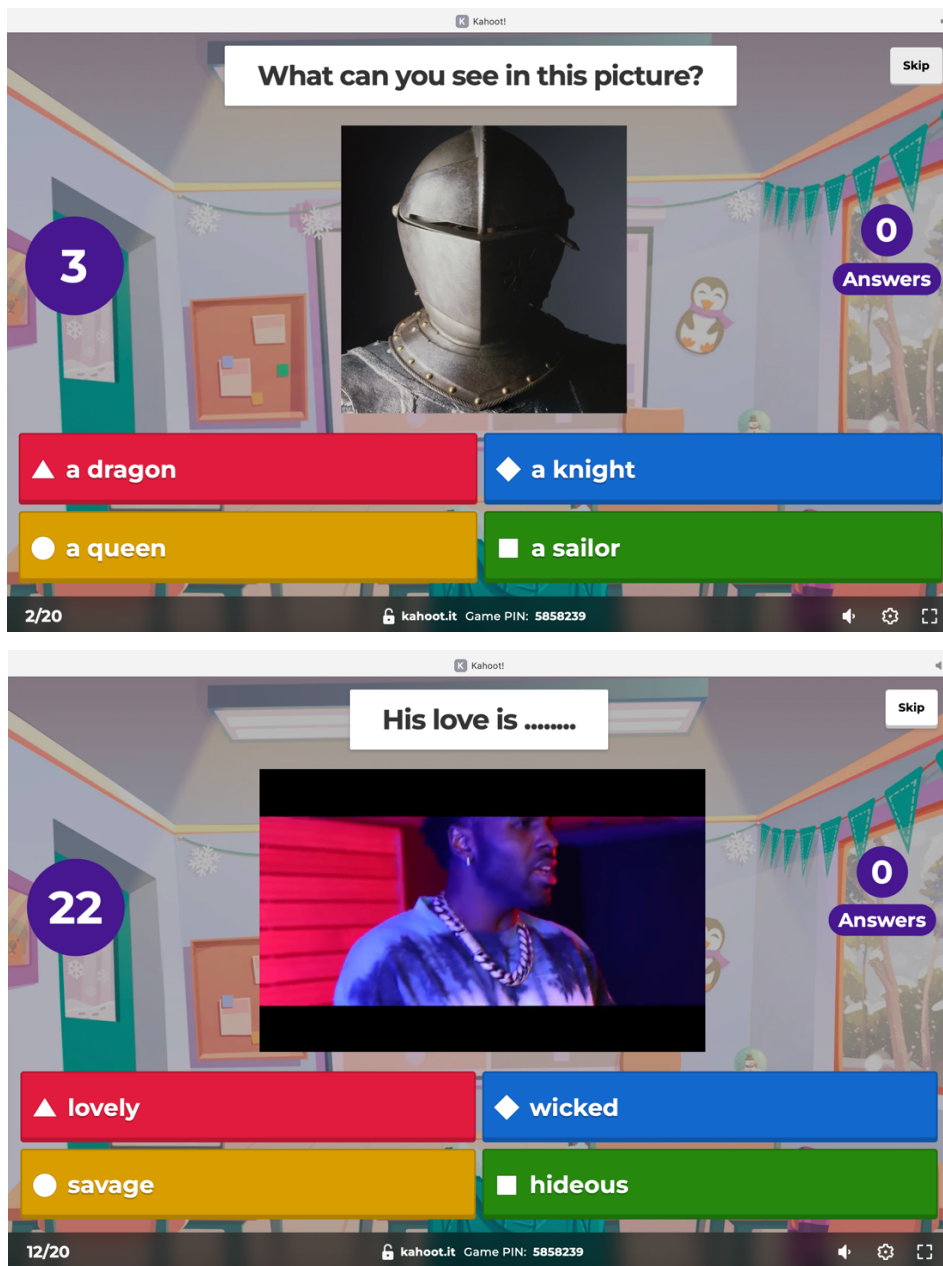
Figure 3. *Screenshots of the Kahoot quiz.*

In the end, a survey was administered to the students to measure their engagement, performance, and acceptance of the new education tool. The questionnaires were handed out to them and were completed in the classroom. The questionnaire was not sent electronically since not all the students have an e mail or have access on an electronic device at home.

CHAPTER 5

5. Results

This chapter describes how the data has been analyzed and which results the data revealed. It starts with the analysis of reliability and validity, followed by the presentation of the results, the mean value and standard deviation of the variables, the correlation analysis and at last the regression analysis. This chapter will answer the research questions and bring new insight to this research.

5.1 Analysis of reliability and validity

Initially, internal consistency reliability and face validity were tested. Using Cronbach's alpha to measure the internal consistency of the instrument used in this survey, the result showed acceptable values above 0.7 threshold for all variables as shown in the following table (Table 4). This threshold was suggested by Šerbetar and Sedler (2009). Thus, this survey tool used can be said to be reliable and acceptable. Of the 18 questions of the students' perception on integration of gamification in EFL context questionnaire, the necessary recoding/reverse scoring was done where necessary, so that higher values indicate greater satisfaction.

Table 4. *Cronbach alpha reliability measurement scales*

	Cronbach's α
GPU	0.705
GPEOU	0.702
AT	0.706
SE	0.754
IE	0.700

5.2 Results

In the tables that follow the data collected by the questionnaire was presented in the form of percentages. The answers to all the questions were presented in tables analytically. Furthermore, the correlation matrix is provided in order to present the associations among the five variables (perceived usefulness, perceived ease of use, attitude towards using gamification technology, skills engagement, and interaction engagement). Lastly, the analysis based on the gender and the nationality were illustrated in table forms.

To begin with, Table 5 showed the frequencies of the respondents with 11.4% of them were neutral whereas more than 80% agreed and strongly agreed that if they use online gamification, their learning performance will be improved.

Table 5. *Using the online gamification system improves my learning performance*

GPU1	Counts	% of Total
Strongly disagree	1	1.4 %
Neutral	8	11.4 %
Agree	28	40.0 %
Strongly Agree	33	47.1 %

It is obvious from Table 6 that the majority of the students agreed that the use of online gamification can increase their learning outcome. More specifically, 51.4% of the students chose the option "Agree" while 42.9% chose the option "Strongly Agree".

Table 6. *Using the online gamification system increases my learning outcome*

GPU2	Counts	% of Total
Disagree	1	1.4 %
Neutral	3	4.3 %
Agree	36	51.4 %
Strongly Agree	30	42.9 %

Overall, students answered positively that the use of online gamification is useful in their learning (Table 7). More precisely, more than 8 students out of 10 agreed that this educational tool is useful in their learning.

Table 7. *Using the online gamification system is useful in my learning*.

GPU4	Counts	% of Total
Disagree	1	1.4 %
Neutral	10	14.3 %
Agree	39	55.7 %
Strongly Agree	20	28.6 %

As far as the flexibility of the online gamification system is concerned (Table 8), students' perception was positive. For instance, more than 9 out of 10 students agreed that this educational tool is flexible.

Table 8. *I find the online gamification system to be flexible to be used*.

GPEOU1	Counts	% of Total
Disagree	1	1.4 %
Neutral	5	7.1 %
Agree	36	51.4%
Strongly Agree	28	40.0 %

Based on Table 9, it is obvious that the learners found the interface clear and understandable. More precisely, 61.4% of the students agreed that they did not face any difficulties using the online gamification functionality and interface.

Table 10 shows that some of the students believed that the online system required some mental effort since 34.3% of them were neutral while most of them (75.7%) agreed that the system did not require much mental effort

Table 9. *The online gamification functionality and interface is clear and understandable.*

GPEOU2	Counts	% of Total
Disagree	1	1.4 %
Neutral	5	7.1 %
Agree	43	61.4 %
Strongly Agree	21	30.0 %

Table 10. *Interacting with the online gamification system does not require a lot of my mental effort*

GPEOU3	Counts	% of Total
Strongly disagree	1	1.4 %
Disagree	6	8.6 %
Neutral	24	34.3 %
Agree	31	44.3 %
Strongly Agree	8	11.4 %

In general, more than 70% of the students found the online gamification system easy to use (Table 11). However, there was a small but significant percentage of 21.4% of the students whose perception on this matter was neutral (Table 11).

Table 11. *Overall, I believe that the online gamification system is easy to use.*

GPEOU4	Counts	% of Total
Disagree	1	1.4 %
Neutral	15	21.4 %
Agree	25	35.7 %
Strongly Agree	29	41.4 %

Based on the data shown in Table 12 and Table 13, the majority students agreed that gamification is a good idea and that they like learning with online gamification system.

Table 12. *I think that using online gamification system is a good idea.*

AT1	Counts	% of Total
Neutral	2	2.9 %
Agree	36	51.4 %
Strongly Agree	32	45.7 %

Table 13. *I like learning with online gamification system.*

AT2	Counts	% of Total
Neutral	1	1.4 %
Agree	22	31.4 %
Strongly Agree	47	67.1 %

Based on Table 14, 9 out of 10 students look forward to having learning that require the use of online gamification system.

Table 14. *I look forward to those aspects of my learning that require the use of online gamification system.*

AT3	Counts	% of Total
Neutral	1	1.4 %
Agree	26	37.1 %
Strongly Agree	43	61.4 %

Table 15 shows that the majority of the students have a positive opinion on the fact that online gamification system encourages them in taking good notes in classroom. More specifically, 51.4% of the students agreed and 38.6% strongly agreed that online gamification enhance the notetaking skill in the classroom. In the same direction, Table 16 shows the percentage of students who are encouraged through online gamification system in listening carefully on the classroom. Actually, more than 90% of the participants responded that there were positively affected by this educational tool and paid more attention in the classroom.

Table 15. *Online gamification system encourages me in taking good notes in classroom.*

SE1	Counts	% of Total
Disagree	3	4.3 %
Neutral	4	5.7 %
Agree	36	51.4 %
Strongly Agree	27	38.6 %

Table 16. *Online gamification system encourages me in listening carefully in classroom.*

SE2	Counts	% of Total
Strongly disagree	2	2.9 %
Neutral	4	5.7 %
Agree	35	50.0 %
Strongly Agree	29	41.4 %

The following data (Table 17) shows that more than 8 out of 10 students agreed that online gamification system encourages them to study daily whereas 7.1% disagreed with that opinion.

Table 17. *Online gamification system encourages me in making sure to study on regular basis*

SE3	Counts	% of Total
Strongly disagree	1	1.4 %
Disagree	5	7.1 %
Neutral	4	5.7 %
Agree	32	45.7 %
Strongly Agree	28	40.0 %

Table 18 shows the agreement of the students that online gamification system contributes to having fun in the classroom. 32.9% of them agreed while 61.4% strongly agreed that their learning with online gamification is fun. Only 5.7% of students were neutral and there were no disagreements on this perception.

Table 18. *Online gamification system contributes to me in having fun in the classroom.*

IE1	Counts	% of Total
Neutral	4	5.7 %
Agree	23	32.9 %
Strongly Agree	43	61.4 %

The following table (Table 19) demonstrates the number of students who agreed that online gamification contributed to participating actively in small-group discussions. In fact, 9 out of 10 students responded positively that online gamification helped them develop this kind of skill. It is interesting to note here that none responded negatively.

Table 19. *Online gamification system contributes to me in participating actively in small-group discussions*

IE2	Counts	% of Total
Neutral	6	8.6 %
Agree	28	40.0 %
Strongly Agree	36	51.4 %

From Table 20 it becomes obvious that 80% of the participants agreed that online gamification encouraged them to develop the skill of helping their other classmates.

Table 20. *Online gamification system contributes to me in helping fellow students*.

IE3	Counts	% of Total
Strongly disagree	1	1.4 %
Disagree	2	2.9 %
Neutral	11	15.7 %
Agree	21	30.0 %
Strongly Agree	35	50.0 %

The following table (Table 21) indicates that learners were encouraged to ask questions when they did not understand their professor. More precisely, 88.5% of the participants

responded that they were actually helped to develop this skill through the online gamification system.

Table 21. *Online gamification system contributse to me in asking questions when I did not understand the teacher*

IE4	Counts	% of Total
Strongly disagree	2	2.9 %
Neutral	6	8.6 %
Agree	33	47.1 %
Strongly Agree	29	41.4 %

Table 22 shows the mean value and the Standard deviation of the five variables (Perceived Usefulness, Perceived Ease of Use, Attitude, Skill Engagement, Interaction Engagement). Since a five-point Likert-type scale was used, the value 1-2 shows negative attitudes, the value 3 is an intermediate point of scale while the values 4-5 show positive attitudes. As can be seen from the averages, the respondents (N=70) have given answers near the positive value 4 to all the variables.

Table 22. *Value of mean, median and standard deviation*

	Mean	Median	SD
P. Usefulness	4.29	4.50	0.509
P. Ease of use	4.06	4.00	0.310
Attitude	4.56	4.67	0.419
Skill Engagement	4.22	4.33	0.683
Interaction Engagement	4.37	4.50	0.556

A correlation analysis is also used to measure the relationship between the five variables (Table 23). The variables analyzed are perceived usefulness, perceived ease, attitude, skill engagement, interaction engagement.

Table 23. *Correlation Matrix*

	P. Usefulness	P. Ease	Attitude	Skill	Engagement
P. Usefulness	—				
P. Ease of use	0.030	—			
Attitude	0.333**	0.140	—		
Skill Engagement	0.292*	-0.033	0.258*	—	
Interaction Engagement	0.091	0.060	0.323**	0.416***	

Association between skill engagement and perceived ease of use.

The correlation test shows that there is negative correlation between skill engagement and perceived ease of use (N = 70, r = -0.03). The correlation is negative, and it is not significant since the score is negligible, because it is between 0.1 and -0.1.

Association between interaction engagement and perceived usefulness.

The correlation test shows that there is positive correlation between interaction engagement and perceived usefulness (N = 70, r = 0.09). However, the correlation coefficient is not statistically significant.

Association between attitude and skill engagement.

The correlation test shows that there is a positive significant correlation between attitude and skill engagement (N = 70, r = 0.25). In fact, it is a low positive correlation.

Association between attitude and interaction engagement.

The correlation test shows that there is a statistically significant positive correlation between attitude and interaction engagement (N = 70, r = 0.32). In fact, it is a moderately high positive correlation.

Association between attitude and perceived usefulness.

The correlation test shows that there is a statistically significant positive correlation between attitude and perceived usefulness (N = 70, r = 0.33). In fact, it is a moderately high positive correlation.

Association between skill engagement and interaction engagement.

The correlation test shows that there is a statistically significant positive correlation between skill engagement and interaction engagement (N = 70, r = 0.41). In fact, it is a highly positive correlation.

Association between perceived usefulness and skill engagement.

The correlation test shows that there is a positive significant correlation between perceived usefulness and skill engagement (N = 70, r = 0.29). In fact, it is a low positive correlation.

Association between perceived ease of use and perceived usefulness.

The correlation test shows that there is positive correlation between perceived ease of use and perceived usefulness (N = 70, r = 0.03). However, the correlation coefficient is not statistically significant.

Association between perceived ease of use and attitude.

The correlation test shows that there is positive correlation between perceived ease of use and attitude (N = 70, r = 0.14). However, the correlation coefficient is not statistically significant.

Association between perceived ease of use and interaction engagement.

The correlation test shows that there is positive correlation between perceived ease of use and interaction engagement (N = 70, r = 0.06). However, the correlation coefficient is not statistically significant.

Gender analysis was also made in order to check if the gender is an important factor on how learners perceive the integration of online gamification into their learning. The following table (Table 24) shows the number of boys and girls and the mean value and the Standard Deviation of the five variables (Perceived Usefulness, Perceived Ease of use, Attitude, Skill Engagement, Interaction Engagement) in accordance with the gender.

Table 24. Gender frequency

	Group	N	Mean	SD
P. Usefulness	Male	36	4.28	0.585
	Female	34	4.31	0.422
P. Ease of use	Male	36	4.04	0.319
	Female	34	4.07	0.305
Attitude	Male	36	4.60	0.364

	Group	N	Mean	SD
	Female	34	4.52	0.473
Skill Engagement	Male	36	4.19	0.806
	Female	34	4.25	0.532
Interaction Engagement	Male	36	4.44	0.535
	Female	34	4.29	0.574

The following table (Table 25) shows the analysis based on the learners' nationality. In order to have equally sized groups we grouped together all the non-Greek students. As it was mentioned earlier (section 4.5) the survey's participants have various origins such as Albania, Rumania, China and Ukraine. However, since the number of each nationality was limited, it was decided to have two equally sized groups (Greek and non-Greek) and have a more accurate analysis. The table shows the number of Greek and non-Greek students, the mean value and the Standard Deviation of the five variables (Perceived Usefulness, Perceived Ease of use, Attitude, Skill Engagement, Interaction Engagement) in accordance with the nationality.

Table 25. Nationality frequency

	Nationality	N	Mean	SD
P. Usefulness	Greek	42	4.25	0.574
	Non Greek	28	4.36	0.393
P. Ease of use	Greek	42	4.05	0.343
	Non Greek	28	4.06	0.260
Attitude	Greek	42	4.51	0.449
	Non Greek	28	4.64	0.362
Skill Engagement	Greek	42	4.19	0.714
	Non Greek	28	4.27	0.642
Interaction Engagement	Greek	42	4.41	0.471
	Non Greek	28	4.30	0.668

In the next section there is a detailed discussion of the results provided here. Based on the data derived from the questionnaire all the variables are discussed thoroughly. The research questions are also answered, and conclusions are drawn.

5.3 Discussion

The results from the experiment are very interesting. They show notable correlations among gamification perceived usefulness, perceived ease of use and attitude towards online gamification. In this section we discuss the effects of gamified learning on the students' engagement both skill and interaction.

Gamification Perceived Usefulness

The data showed in the previous section, indicate that not only students think that online gamification can improve their learning performance but also it can increase their learning outcome. More specifically, 47.1% of the students strongly agreed that online gamification can be beneficial in their learning performance while 42.9% of the participants strongly agreed that their learning outcome has been positively affected by the integration of online gamification. These high percentages of agreement in table 5 and table 6 reflect the learners' perception that online gamification system is useful for their learning, a fact that is also confirmed in the table 7 were learners respond clearly to that question. Learners' answers showed clearly that perceived usefulness plays an important role for them in order to accept a new technological tool.

Analysis of gamification perceived usefulness variable shows that the distribution of the data was normal as the value of mean and median are close and the value of standard deviation is low. What is more, it is apparent from the collected data that there is statistically significant positive correlation between perceived usefulness - attitude and perceived usefulness - skill engagement. More precisely, the more useful learners consider the technological tool, the more positive attitude have towards it. In other words, they accepted more the online gamification because they thought that it could be useful for their learning. In the same light, perceived usefulness affects positively their skill engagement. Therefore, learners were more engaged as far as their skill is concerned because they believed that gamification would be useful to develop their skill. On the other hand, it

should be mentioned that perceived usefulness had a slight impact on interaction engagement since learners were not affected by the technology's perceived usefulness to participate actively in the classroom or help more their fellow students.

Gamification perceived ease of use

Participants were asked to give their opinion concerning the perceived ease of use of the examined educational tool. The percentages of agreement were high enough to come to conclusions. To be more precise, more than 90% of learners considered the online gamification platforms that they used flexible having a clear and understandable interface, while just 10% reported that the online gamification system required significant mental effort to use it. All in all, the majority of the learners (77.1%) agreed that online gamification was not difficult to use.

Based on the data collected, it is worth noting that the respondents agreed on the perceived ease of use of the gamification since the mean value was 4.06 (Table 22). It is therefore obvious that the distribution of the data was normal as the value of mean and median is close and the value of standard deviation of 0.310 which means that the data are clustered more closely around the mean value.

According to the table of correlations it can be considered that the perceived ease of use has no influence on learners' attitude, interaction engagement and skill engagement, since the absolute correlation value was rather small (0.03 – 0.14) and without statistical significance. That means that learners are not affected positively or negatively towards this new technological tool just because they consider it easy to use. In other words, perceived ease of use is not a factor that can influence their opinion on this educational practice. One interpretation of this tendency is that as it was mentioned earlier, students of this generation are considered "digital natives" (Prensky, 2001) and use technology devices and apps on a daily basis. Therefore, they are familiar with the use of technology without facing difficulties in using it and having experience and skills to overcome any problem may arise. Consequently, it is expected by them to have this perception and not consider perceived ease of use a major variable in order to have a positive attitude towards online gamification and high levels of engagement.

Attitude towards using online gamification

Based on the participants' answers mentioned earlier, learners' attitude towards online gamification can be described as positive. Their enthusiasm and their acceptance are clear in their responses. In fact, more than 96% has agreed that online gamification system is a good idea and 67.1% of students strongly agreed that they like learning with online gamification system. In the same light, the learners who look forward to those aspects of their learning that require the use of online gamification system are more than 98%.

The minor difference (0.11) between mean and median along with the low value of standard deviation (0.419) shows that the data is clustered around the mean value, indicating that the distribution of data for attitude towards using gamification technology was normal. Additionally, the correlation matrix indicates that learners' attitude has a positive statistically significant impact on both skill and interaction engagement. To be more specific, the data show that the fact that students enjoyed and accepted the new technological tool led them to be more engaged in the lesson as far as their skill and their interaction are concerned. Learners seem to strongly agree that online gamification contributed to having fun during their lessons and therefore to making them study on a regular basis.

Student engagement

The data collected by the questionnaire provided some interesting results regarding students' engagement. Generally speaking, most of the participants responded positively on the contribution of online gamification system in developing both skills and interaction engagement. Particularly, 90% of the students claimed that the integration of online gamification into their learning encouraged in taking good notes in classroom. Additionally, the majority of them (91.4%) responded that online gamification system encouraged them in listening carefully in classroom. It is also essential the percentage of the students (87.5%) who said that online gamification system encouraged them to study on regular basis. As far as the interaction engagement is concerned more than 90% of the participants responded that they were having fun while participating in gamified lessons and 91.4% of them claimed that online gamification system contributed to participating actively in small-group discussions. Moreover, 8 out of 10 students responded that taking part in gamified lessons encouraged them to help their fellow students. Lastly, online

gamification system seemed to encourage most learners (88.5%) to ask questions when they did not understand the teacher.

The minor difference (0.11) between mean and median along with the low value of standard deviation (0.68) shows that the data is clustered around the mean value, indicating that the distribution of data for skill engagement was normal. Similarly, the analysis of interaction variable shows that the distribution of the data was normal as the value of mean and median are close, and the value of standard deviation is low Based on the correlation matrix (table 23) it is interesting to note that there are some correlations worth mentioning. To begin with, it is observed an association between attitude and interaction engagement. In fact, learners who had a positive attitude towards online gamification seemed to be encouraged more to participate in small-group activities, to help their fellow students and ask declarative questions. In the same light, there is positive correlation between attitude and skill engagement. The positive attitude towards gamified lessons contributed learners to listen carefully in the classroom and study on a regular basis. Another essential correlation that is necessary to discuss is the association between perceived usefulness and skill engagement. Although the correlation is limited (less than 0.3, $p < 0.05$), it is worth noting that learners who considered useful the new educational tool developed their skill engagement. In fact, taking into account the perceived usefulness of the online gamification system, learners were encouraged to take more notes during the lesson and to listen more carefully during the instruction. Last but not least, skill engagement is correlated (>0.4 with $p < 0.001$) to interaction engagement meaning that when students develop their skill engagement, they also develop their interaction engagement and vice versa. For instance, while they were listening more carefully in the class and studying on regular basis, they were encouraged to have more fun during the lesson and become more helpful with their classmates. The rest of the correlations were rather limited (<0.1 and not statistically significant) and, as a consequence, did not provide interesting results.

Analysis based on gender and nationality

As far as the gender analysis is concerned, in table 24 it is apparent that there are no findings of great significance. In fact, the values of mean and of standard deviation appear no difference between the two groups. Both male and female students responded similarly in the questionnaire and therefore it is concluded that gender does not affect their perception concerning the perceived usefulness, perceived ease of use, attitude, skill

engagement, and interaction engagement. Consequently, there is no need of carrying out homogeneity test and statistical hypothesis tests (such as Student's t-test or Welch's test) to verify the statistical significance. This finding can be explained by the fact that both male and female students nowadays are very familiar with technology and online gaming, and they all have equal access to electronic devices from a young age.

In the same context was the analysis based on the nationality. Table 25 shows that there is no difference between the two groups (Greek and non-Greek). Both Greek and non-Greek students responded similarly in the questionnaire and therefore it is concluded that nationality does not affect their perception concerning the perceived usefulness, perceived ease of use, attitude, skill engagement, and interaction engagement. As it was mentioned before, this similarity in the responses did not create the need to carry out homogeneity test and statistical hypothesis tests (such as Student's t-test or Welch's test) to verify the statistical significance. It is obvious then that most of the students use technology and play games independently of their nationality.

5.4 Limitations and further research

It goes without saying that studies have limitations, and it is of great need to recognize and stress them since this contributes to strengthening their credibility (Drisko, 1997). As Merriam (2009) also states, one way of showing trustworthiness to the readers is to realise and elucidate these limitations.

Considering that the number of participants is limited, definite conclusions cannot be drawn. It is impossible to definitely generalize the effects of the gamified interventions, particularly as this study does not use a control group due to practical restrictions. For example, there could not be access to another target group since there was another responsible teacher for them. Additionally, generalization of the findings cannot happen because the correlation values are less than 0.5 and therefore accurate conclusions cannot be drawn.

Another limitation worth mentioning was the fact that learners were initially overwhelmed due to their anxiety of sitting examinations at the end of the semester and as a result some of them were not open to this new and challenging idea from the beginning. In fact, they considered the experience a waste of time and believed they could use their time practising

vocabulary and grammatical structures. The moment the first game started these feelings faded away and learners were thrilled and looking forward to the next lesson.

Also, the duration of the gamification implementation needs to be longer so that more secure conclusions can be drawn as to whether there are long-term positive effects, or they quickly fade. According to Hamari et al. (2014) there is the concern that any positive results may be due to the fact that it is simply a new experience. In fact, according to the results the majority of the students responded positively to all of the questions. Therefore, there is a possibility that this happened because it was the first time they were exposed to gamified lessons. Therefore, it is likely that their enthusiasm is due to their inexperience.

Lastly, it is essential to mention that some Game Elements were not practised in these gamified lessons. The platforms Kahoot! and Quizlet do not consist of all the principles or mechanics mentioned in the literature review. As a result, these elements remained undetected by the students. Therefore, we cannot say for sure what the students' learning experience is adequate in order to generalize the results.

The key next steps of this work could be to apply online gamification to a greater number of students of various ages (e.g., 10-18) for a longer period of time (e.g., throughout the school year). In this way, more valid and accurate conclusions could be drawn regarding the effectiveness of online gamification on increasing learning outcomes.

Conclusion

The present dissertation aimed to investigate the perception of learners on the integration of online gamification in L2 learning in an EFL context. The development of communicative competence is the ultimate goal of CLT which is strongly supported by both curricula, CEFR (Council of Europe, 2001) and Pedagogical Institute (2003) followed in Greek educational reality. However, textbook syllabi are proven to be mostly concentrated on the practice of vocabulary and grammar based on the examination formats. This old school method has led to the decrease of learners' engagement and motivation. Therefore, new innovative techniques should be used to overcome this difficulty. Online gamification was suggested to deal with this deficiency since it has become a very popular educational tool the last years aiming at increasing the levels of engagement. The survey was conducted in the Junior High school of Kassandra and lasted approximately one semester. The investigation was based on the research model developed by Ahmad et al. (2018) to investigate learners' acceptance towards gamification and its effect towards their engagement. The basis of this model was the Technology Acceptance Model (TAM) by Davis et al. (1989) and Student Course Engagement Questionnaire (SCEQ) by Handelsman et al. (2005). The model consists of five variables: perceived usefulness, perceived ease of use, attitude towards using gamification technology, skills engagement, and interaction engagement.

The whole procedure was completed successfully, although learners were not familiar with the two specific technological tools (Kahoot! and Quizlet). In the beginning, a short introduction was given to the students regarding the use of the new technology in the classroom. They were presented and described in order participants to get familiar with the interface and the rules. Learners used the computers provided by the school. Lessons were conducted based on gamified lesson plans. Every week learners practiced the new taught items with the fun activities on Quizlet platform. After a unit was completed, a pop quiz using Kahoot! was held to assess the students understanding before going to the next unit. In the end, a survey was administered to the students to measure learners' engagement, participation and acceptance.

The analysis of the data derived by the questionnaire revealed that students were more inclined to use the gamification if the technology was useful and thus, taking less account of

the perceived ease of use the gamification. Therefore, perceived usefulness was found to be a better indicator of students' attitude towards using gamification technology. The more useful learners consider the technological tool, the more positive attitude have towards it. Additionally, perceived usefulness was proven to affect positively learners' skill engagement. On the other hand, perceived ease of use is not a factor that can influence their opinion on this educational practice. Another conclusion worth mentioning is that learners' attitude has a positive statistically significant impact on both skill and interaction engagement. Lastly, students develop their skill engagement if they develop their interaction engagement and vice versa.

Nevertheless, wider and longer research needs to be done to gather more data about the effect of online gamification. A four-month survey may not be sufficient to measure learners' engagement. A longer study will be more objective and will help us come to more accurate conclusions. It is also advised more studies to be carried out in the future, with larger numbers of students, so the benefits of online gamification can be examined quantitatively. In addition, it would be rewarding to carry out this kind of research to younger ages and lower levels to examine the benefits of this innovative technology on the development of communicative competence from the first years of English learning. Finally, it would be interesting to see further research not only at state schools but also at private language institutions.

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APPENDICES

Appendix A: Textbook syllabi

Hello there!

Interrogative		Short Answers
Am I		Yes, you are. / No, you aren't.
Are you	French?	Yes, I am. /...........................
Is he/she/it		....
Are we /you/they		....

7 **Can you match?**

1. In questions ...	a. 'not' goes after am/is/are
2. In negative sentences ...	b. 'am/is/are' go before the person (I, you, Tom)

8 **Write true sentences about you and your family using the verb 'to be' in the right form.**   Task 5 - p.116
☆☆

e.g. *My cousin / be / English.*   *My cousin isn't English.*

1. My friends / be / good students ....

2. Mum / be / at home ....

3. Cycling / be / my favourite sport ....

4. My best friend and I / be / in the same class ....

9 **Complete the text. Use He's/ She's/They're.**   Task 6 - p.116
☆☆

This is a picture of Mark and his family. *He's* a High School student. [1]_____ thirteen years old and his favourite sport is judo. His mother's name is Alice and [2]_____ a teacher. His father's name is Andrew. [3]_____ a famous basketball player. Mark has got two sisters. [4]_____ both eight years old. [5]_____ twins.

10 **Use the words below to ask and answer questions.**   Task 7 - p.116
☆☆

e.g. Mark/Italian?
*Is Mark Italian?*
No, *he isn't. He's* Australian.

UNIT 2   11

2. Language Focus

2.1 Fill in the blanks with an appropriate form of the verbs in brackets.

Omar (1) .... (be) a boy of twelve. He (2) .... (live) in the Sahara desert and although the days (3) .... (usually / be) hot, the nights (4) .... (often / be) cold. Omar's people are nomads and they (5) .... (live) in tents that can easily be moved from place to place. Today is a very busy day. Omar and his brothers (6) .... (pull) up the tent poles and his father (7) .... (roll) up the tents. They (8) .... (move) to a new place near an oasis. Omar's sister (9) .... (always / help) with the chores. Today, she (10) .... (tie) the bundles to the camels' saddles and she (11) .... (load) the food and water bags on them, too. Omar's family (12) .... (never / stay) in one place very long.

2.2 Write questions and short answers.

1. the Japanese / always / wear / kimonos

....?

No, ... Only on special occasions.

2. your French friend / often / eat / snails

....?

Yes, ... They're his favourite food.

3. you / fly / Italy / tomorrow

....?

Yes, ... I can't wait.

4. the children / listen / new songs / at the moment?

....

....?

No, ... They're dancing.

5. it / be / wet / today

....?

No, ... The sun is shining.

6. you / usually / travel / abroad

....?

Yes, ... Once or twice a month.

It's up to you p. 132

2nd snail eating fest !!!

FAR AWAY

Activity 12

Read the text below and choose the correct word for each space.

Holiday Breaks   *Visit this destination at your own risk*

Bruug, Switzerland

Brugg is the archetypal sleepy and __1__ Swiss town where everyone knows everyone else and therefore nobody talks to __2__. It is really pointless to go there as everything is so dull. The food is not so good __3__. Shops specialize in expensive cheeses with more holes in them __4__ cheese. According to a recent survey, two out __5__ every three married couples met each __6__ at a watch exhibition. For a town with such a great watch history, it is strange that people have no time for it. The people are wonderful __7__.

1. a. bored	b. tiring	c. boring	d. exhausted
2. a. everyone	b. someone	c. someone	d. anyone
3. a. either	b. also	c. too	d. that
4. a. that	b. with	c. than	d. and
5. a. at	b. in	c. of	d. with
6. a. other	b. others	c. another	d. one
7. a. although	b. but	c. though	d. so

Activity 13

Look at the map of the world. Write the famous attraction in each country on the line provided.

Activity 14

Rewrite each of the sentences to have a similar meaning using **so + adjective + that.**

1. It was too cold for us to go for a walk.
   It was ………………………………… we couldn't go for a walk.

2. We couldn't afford to buy souvenirs as they were so expensive.
   The souvenirs were ……………………………… we couldn't afford to buy them.

3. We bought lots of gift as everything was very cheap.
   Everything was ……………………………… we bought great gifts.

Appendix B: Questionnaire

Student questionnaire on the learners' perception on how the application of online gamification in Greek EFL contexts can enhance their engagement.

According to your personal experience of use, please indicate the extent to which you agree or disagree with the following statements about the possible outcomes of using online gamification as a supportive teaching method in education.

Gender: Male / Female

Age: _____

Nationality: _____

Degree of agreement					
1. (Strongly disagree), 2 (Disagree), 3 (Neutral), 4 (Agree), 5 (Strongly Agree).					

	Learners' perception on using online Gamification in English language learning	**Degree of agreement**				
		1	2	3	4	5
1	Using the online gamification system improves my learning performance.	□	□	□	□	□
2	Using the online gamification system increases my learning outcome.	□	□	□	□	□
3	Using the online gamification system enhances my desire to produce desired result in my learning.	□	□	□	□	□
4	Using the online gamification system is useful in my learning.	□	□	□	□	□
5	I find the online gamification system to be flexible to be used.	□	□	□	□	□
6	The online gamification functionality and interface is clear and understandable.	□	□	□	□	□
7	Interacting with the online gamification system does not require a lot of my mental effort.	□	□	□	□	□
8	Overall, I believe that the online gamification system is easy to use.	□	□	□	□	□
9	I think that using online gamification system is a good idea.	□	□	□	□	□
10	I like learning with online gamification system.	□	□	□	□	□
11	I look forward to those aspects of my learning that require the use of online gamification system.	□	□	□	□	□
12	Online gamification system encourages me in taking good notes in	□	□	□	□	□

	classroom.					
13	Online gamification system encourages me in listening carefully in classroom.	☐	☐	☐	☐	☐
14	Online gamification system encourages me in making sure to study on regular basis.	☐	☐	☐	☐	☐
15	Online gamification system contributes to me in having fun in the classroom.	☐	☐	☐	☐	☐
16	Online gamification system contributes to me in participating actively in small-group discussions.	☐	☐	☐	☐	☐
17	Online gamification system contributes to me in helping fellow students.	☐	☐	☐	☐	☐
18	Online gamification system contributes to me in asking questions when I did not understand the teacher.	☐	☐	☐	☐	☐

«Δηλώνω ρητά και ανεπιφύλακτα ότι, σύμφωνα με το άρθρο 8 του Ν. 1599/1986 και τα άρθρα 2,4,6 παρ. 3 του Ν. 1256/1982, η παρούσα εργασία αποτελεί αποκλειστικά προϊόν προσωπικής εργασίας και δεν προσβάλλει κάθε μορφής πνευματικά δικαιώματα τρίτων και δεν είναι προϊόν μερικής ή ολικής αντιγραφής, οι πηγές δε που χρησιμοποιήθηκαν περιορίζονται στις βιβλιογραφικές αναφορές και μόνον.»

Υπογραφή: