

UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL
INSTITUTO DE LETRAS

GAMIFICATION AND THE ADDITIONAL LANGUAGE CLASSROOM

KRYSTOFF KNAPP HORST

PORTO ALEGRE

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Trabalho de conclusão de curso de graduação
apresentado como requisito parcial para obtenção
do grau de Licenciada em Letras pela Universidade
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Orientadora: Prof^a. Dr^a. Simone Sarmiento

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ABSTRACT

This study seeks to provide a review on gamification regarding education and language teaching; gamification is the use of game mechanics in context different from games (Kiryakova, 2017). Games have a number of necessary characteristics, divided into game elements, such as points, storytelling, progression, freedom of choice, among others. In gamified education some of these features are used in the classroom to achieve specific outcomes relevant to the class (Marczewski, 2013). Here we review these game elements focusing on approaches that enable teachers to benefit from gamification methods in the English classroom.

Key words: gamification; education; second language learning;

RESUMO

Este estudo se propõe a fornecer uma revisão em gamification o no que diz respeito a education e a aquisição de segunda língua; gamification significa o uso de mecânicas de jogos em contextos diferentes de jogos (Kiryakova, 2017). Jogos tem um número de características necessárias: pontos, narração, progressão, liberdade de escolha, entre outros. Em educação gamificada alguns desses aspectos são usados na sala de aula para alcançar resultados específicos relevantes para a sala (Marczewski, 2013). Aqui nós revisamos estes elementos de jogos focando em métodos que proporcionem professores a se beneficiar dos métodos de gamificação na sala de aula de língua inglesa.

Palavras-chave: gamificação educação; aprendizado de segunda língua;

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LIST OF ABBREVIATIONS

ACMC – Asynchronous Computer Mediated Learning

CALL – Computer Assisted Language Learning

CMC – Computer Mediated Learning

DL – Distance Learning

ESL – English as a Second Language

LMS – Language Management System

MOOC – Massive Online Open Course

NPC – Non Player Character

SCMC – Synchronous Computer Mediated Learning

ZPD – Zone of Proximal Development

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1. INTRODUCTION

Never before have we seen changes throughout the world in such a fast pace as in the last 30 years. Driving faster and safer cars, “going” to the bank without leaving home, watching what we want when and where we want, having cellphones outnumbering our population in Brazil, among many other advances. It is undeniable everything has changed and is always changing. Everything, except (most) school practices. Not much will surprise us if we look into classrooms nowadays, i.e., they still apply the same methodologies as the ones employed by our parents’ teachers: teacher-centered classes, teacher speaking most of the time, passive students in rows paying (or not) attention and copying (or not) - or at least the ones sitting in the front rows do it. As for the ones in the back rows, they may be checking cellphones, messing around and complaining about the class. Moreover, content is often disconnected from reality and from students’ real needs. This banking education (Freire, 1970), in which knowledge is deposited into students’ memory accounts, is a heritage of the Enlightenment. Enlightenment believed all knowledge could be put into a book, and, because of this, all this knowledge could easily be transferred from a person to another person. Well, this seems to be the logic of the classroom to this day, although it does not seem to be working well in this new era.

Hence, the standard education system faces the challenge of making students learn meaningful skills that will help them in life beyond school (Schlatter and Garcez, 2009). Aligned with this challenge, curriculum, methodologies, time and spaces in education have to be reviewed (Moran, 2015). Currently, proactivity, collaboration, ownership, among other skills, are still not catered for in standard classes.

To face this, theories concerning active and interdisciplinary education arose decades ago. Among this new type of methodologies, we can mention project based pedagogy (Hernandez, 1998, 2004), computer-assisted learning (Garrett, 1991), and gamification (Blake, 2009). The objective of this paper is to explore the idea of gamification in education and to discuss alleged benefits of such technique in language teaching to propose ways for teachers use this in the classroom. In the next subsection, we shall present different types of active methodologies. Section 2 will introduce game studies and gamification, while 2.1 defines game types, and 2.2 defines game elements. Section 3 will discuss how game elements could be added to the additional language classroom: the first subsection (3.1) focuses on software apps for the classroom; the second subsection (3.2) presents a technique to create a gamified experience; while the last subsection shows us practical suggestions.

1.1. Active methodologies

Some decades ago, when the access to information was not as widespread as it is today, standard schooling centered on the teacher and on transmitting information brought from books was justified. Considering the present scenario, with easier access to information, it is reasonable to assume traditional schools should adapt. Active methodologies understand this scenario and present options to act in a progressive way towards more advanced reasoning processes, cognitive interaction, generalization or abstraction, and the creation of new practices (Moran, 2015).

Hernández (2009) fights against the standard practice of the traditional school-centered education and suggests a transdisciplinary project-based approach, in which education builds on the individual to act according to each stage of their lives considering their own necessities and interests in an integrated curriculum. In this way, the school curriculum is not seen as a closed package offered as a fragment of reality based on a simple transmission of information, but as a bridge between knowledge and citizenship. All these concerns are also addressed in the Brazilian National Curriculum References (BRASIL, 1998), published by the Brazilian Department of Education and Culture.

Technology as an aid to the classroom, more specifically in computer-assisted language learning (CALL) called Garrett's attention in 1991. In her work, she argued computers should be used as a teacher's aid rather than ignored or relegated to simple vocabulary activities or passive interactions. She also emphasized process over product and encouraged interaction in the additional language as much as possible. These ideas are seen as a learner-centered approach, which opposes a teacher-centered one (Blake, 2009) since they are based on student's demands. CALL methods evolved to computer-mediated communication (CMC) methods, which suggest the adoption of a more interactive classroom with text, audio, and video exchanges. CMC is divided into two categories: (1) synchronous CMC – instant replies from the teacher – and (2) asynchronous CMC – delayed replies from the teacher. The two can be regarded as Distance Learning (DL) as well, which involves learning taking place when teacher and student are physically distant from each other. CMC and DL derived from CALL studies (Blake, 2009). These theories orbit among other terms as well, such as e-learning, online learning, distributed learning, open learning, life-long learning, or blended and hybrid learning (Aldrich, 2005). The two last ones, blended and hybrid learning, seem to better summarize the idea of the field. In blended learning, students

have face-to-face classes with the teacher while provided with an extension of the classroom in an online environment such as Moodle and Edmodo (Moran, 2015).

Such environments can be used inside and outside classrooms. Making students involved in a complex thread of communicative tools in digital medias. Students have been seeking this interactivity, not with their textbooks and teachers but often times online in Massive Online Open Courses (MOOCs¹) and forums. Therefore, by doing this they apparently fulfill their need to be connected. Even when clear cellphone bans are set in some school contexts, this integration is brought to classes on their devices, what shows the undeniable reality of technology in class.

Regarding active methodologies, more disruptive ideas have also been suggested: banishing disciplines while merging spaces, methodologies, challenges, and games while taking students' needs and learning pace into account (Moran, 2015), among others. In the next section, the early steps of gamification studies are presented.

¹ MOOCs – Examples: Iversity: iversity.org; Coursera: www.coursera.org; EdX: www.edx.org.

2. GAME STUDIES

Game studies emerged as an academic field around 2001 (Aarseth, 2001). For some decades now, games have been engaging people, especially teenagers and young adults, in a variety of virtual environments keeping them busy and away from some real-life responsibilities, such as study and work. Because of the obvious opposition between virtual games (on videogames, cellphones, and computers) and real responsibilities (work, school, and friends), the integration between both seems reasonable and advisable. In this section we intend to focus on the origins of gamification and on the elements that constitute a game, or gamified experience.

Niman (2014, pg 87) summarizes this virtual versus real world relation in the opening sentence of the fifth chapter of his book, *The Gamification of Higher Education*: “We level up in games and level down in life”, meaning that while we advanced towards a goal on one side, on the other we seem to find more failures than success. We could agree these are only two different perspectives, but are school exams to affirm what we have learned or an exercise of our humility? It is all a matter of how numbers are placed, agrees Niman. Meaning that, the way we look at our regular activities, in classrooms and outside can be changed.

Seth Priebatsch, a young entrepreneur of gamified solutions, showed in a TED Talk in 2010², a series of already gamified scenarios, such as the so-called happy hours after work with friends, Farmville, and American Express cards. He suggests some game elements have already been applied to these situations and had positive results, i.e. in happy hours we have appointment dynamics (having to do something at a set time), where some bars promoting these activities show a sense of regularity in it, something that Farmville also does; in American Express cards the rewards are the possibility of changing the color of your credit card to a more desirable one, from yellow to red, grey or black cards, as long as you use it. Also in a TED Talk, in 2010, Jane McGonigal³ mentions one of the reasons for this game frenzy, by introducing the term “epic win”. She suggests gamers are always on the verge of this epic win and because of it they strive for better results constantly. Similar to what happens in the example of the American Express cards, where the more you buy the closer you get to a more beautiful card. McGonigal then elicits four characteristics of these gamers: (1) urgent optimism, (2) social fabric, (3) blissful productivity, and (4) an epic meaning which

² Link for the Ted Talk: https://www.ted.com/talks/seth_priebatsch_the_game_layer_on_top_of_the_world (access on 11th July, 2017)

³ Link for the Ted Talk: https://www.ted.com/talks/jane_mcgonigal_gaming_can_make_a_better_world (access on 11th July, 2017)

make them empowered hopeful individuals, this being a desirable outcome of individuals in a society.

As for the term gamification, according to Google Trends, it had virtually no hit on Google search engines until January, 2010. See image below (Figure 1), but has, since then, drastically increased its frequency.

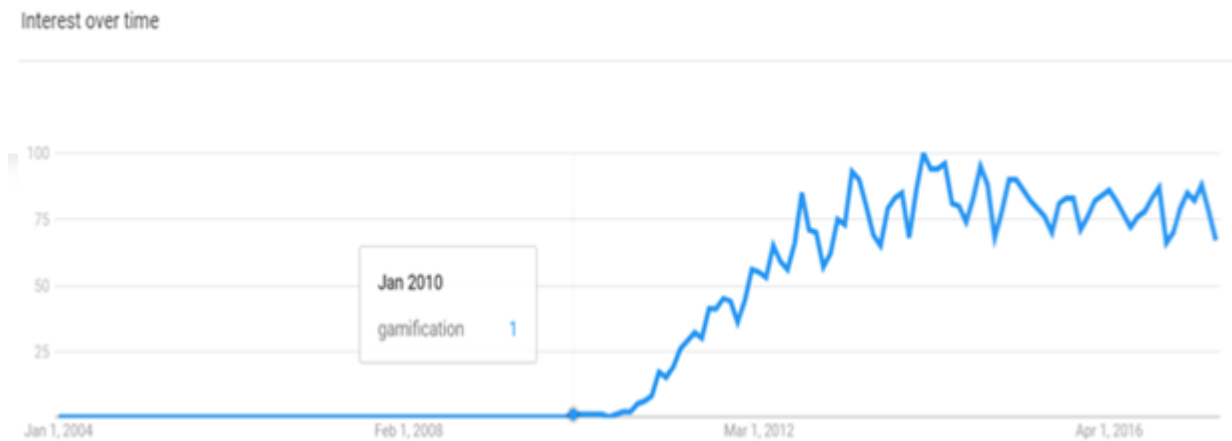


Figure 1: Search for the term “gamification” on Google Trends⁴

The first uses of gamification processes by business companies happened around 2010, and the explosion of the term was fast and huge, according to a CNN article by Alex Konrad in 2011⁵. Gamification means the “use of game thinking, approaches and elements in contexts different from the games” (Kiryakova et al, 2014). Although it seems very connected to games, video games, and electronics, the term is not narrowed to the use of technology. The application of game dynamics, mechanics or elements can happen also through other common games i.e. board games, or more simple forms of interaction. In this sense, for some, the idea of gamification simply stands for placing a “game layer” over any interaction (Priebatsch, 2010). According to Andrzej Marczewski, the founder of a blog called Gamified UK⁶, the term defines a *modus operandi* of “the user-focused application of game elements, game mechanics, game design or game thinking in non-game contexts to engage, motivate, change behavior, solve problems, make goals more achievable, make tasks more playful or add fun” (Piskorz, 2016). Huotari and Hamari (2012) suggest games can also be gamified, then

⁴ Google Trends: The numbers represent search interest relative to the highest point on the chart for the given region and time. A value of 100 is the peak popularity for the term. A score of 0 means the term was less than 1% as popular as the peak. Accessed on 11th July, 2017.

⁵ Link for the article: <http://fortune.com/2011/10/17/inside-the-gamification-gold-rush-2/>

⁶ Gamified UK: <https://www.gamified.uk/>

creating a meta-game structure inside a game. As the definitions suggest, the technology used in games can be a tool to facilitate the process of gamifying, but it is far from being a prerequisite.

Marczewski (2013) defines gamification and its outcomes as “the use of game metaphors, elements and ideas to influence behavior, improve motivation and enhance engagement”. Behavior, motivation and engagement are part of the complex system of reasons that make people act, react and interact with each other and are going to be called here general outcomes. Gamification, therefore, incorporates some game design elements to foster such outcomes. Other possible outcomes of the use of game mechanics are common human desires, according to Innovation Edge (2012), they are shown in the following image (Figure 2):

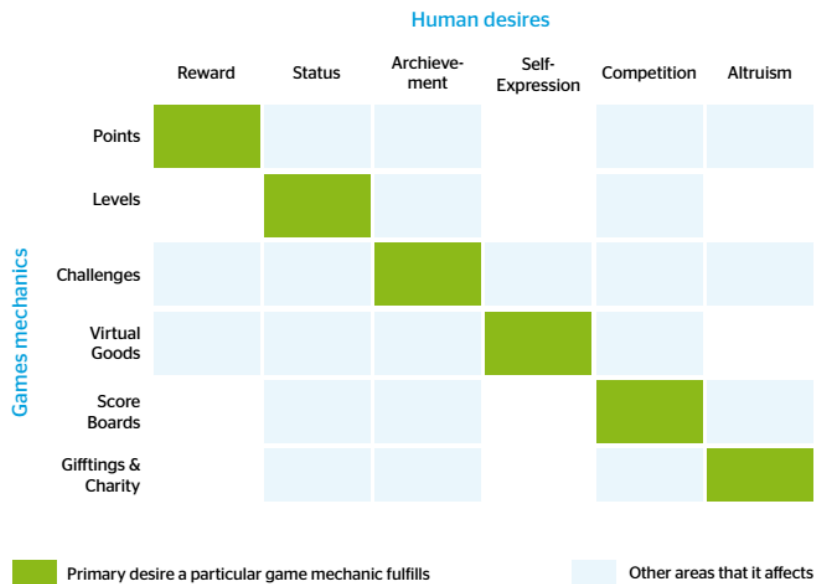


Figure 2: Human desires and Game mechanics combining chart.

The figure suggests a human desire such as self-expression can be fulfilled through many game mechanics, especially by virtual goods, or it means the products and things the character in the game uses in the virtual world. And the same desire can be achieved through challenges when they are successful on a challenging situation. Other game mechanics, such as score boards, points, or levels do not fulfill specifically self-expression what is shown by the blank spaces in the figure.

Another theory that stands close to the previous one is the flow. According to Mihaly Csikszentmihalyi, a researcher on happiness, the flow is:

“...being completely involved in an activity for its own sake. The ego falls away. Time flies. Every action, movement, and thought follows inevitably from the previous one, like playing jazz. Your whole being is involved, and you’re using your skills to the utmost.” Innovation Edge (2012)

This state describes what a good game promotes. It is relevant to point out here that even though some adults may not be so prone to games, they may experience this situation in other areas of their life. And such activities, when promoting this sense of flow, can be considered games. Activities that may generate flow are: going to the movies, talking to friends, loving someone, and listening to music. It is dully noticed that such activities involve people, and get people involved for their own sake, such as the definition proposes. Csikszentmihalyi (2008) argues that the learning levels of individuals, while in state of flow, are enhanced due to the dependency of the limbic system, responsible for formation and consolidation processes of new memories, which, in turn, controls our emotions and is impacted by the state of flow. The flow is obtained through eight characteristics: (1) a challenging activity requiring skill; (2) a merging of action and awareness; (3) clear goals; (4) direct, immediate feedback; (5) concentration on the task at hand; (6) a sense of control; (7) a loss of self-consciousness; and (8) an altered sense of time. To exemplify the theory, Csikszentmihalyi (2008) proposes the following chart (Figure 3):

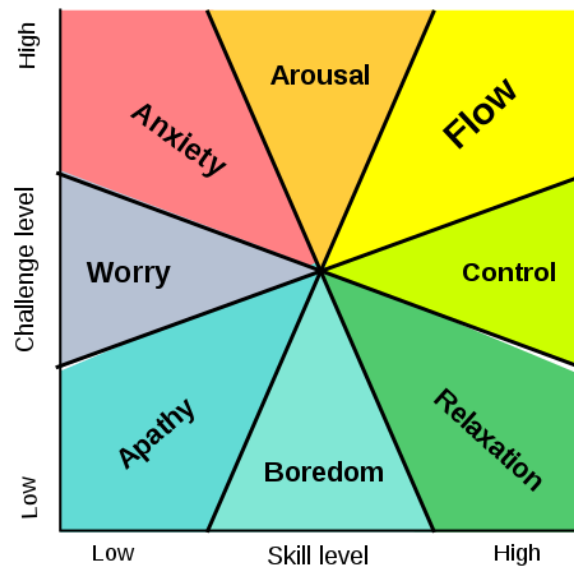


Figure 3: The flow model, according to Csikszentmihalyi.

Image taken from Wikipedia⁷.

⁷ Wikipedia link for the image: https://en.wikipedia.org/wiki/File:Challenge_vs_skill.svg

The yellow up-right corner of the figure describes the state of flow, with balanced skill and challenge levels. This state would be much welcomed in classrooms and is in parallel with some of the gamification outcomes to be discussed further in this paper.

Also consonant with gamified applications was the fun theory⁸. It consists of a project conducted by Volkswagen, the car manufacturer, to award ideas and applications created by applicants in which an intentional change of behavior would happen. One of the winners, the Speed Camera Lottery consisted in a gamified speeding camera in which drivers passing by within the speed limit would get a chance to win the money of drivers who got a speeding ticket, the result was a speed reduction of 22% in a fun and engaging way similar to the feelings games evoke.

With the outcomes of gamification processes profitable to many areas as mentioned above, education could not stand apart from this trend and has been including game elements in its classrooms (Piskorz, 2016; Weissheimer and Braga, 2017). In order to clarify the topic of gamification a review on some game design was also conducted. Game design elements are defined here as any aspect that produces the three main outcomes of gamification: influence actions, improve motivation and enhance engagement, all of them supported and kept constant by the state of flow. To exemplify this, a chart was created as follows (Figure 4):

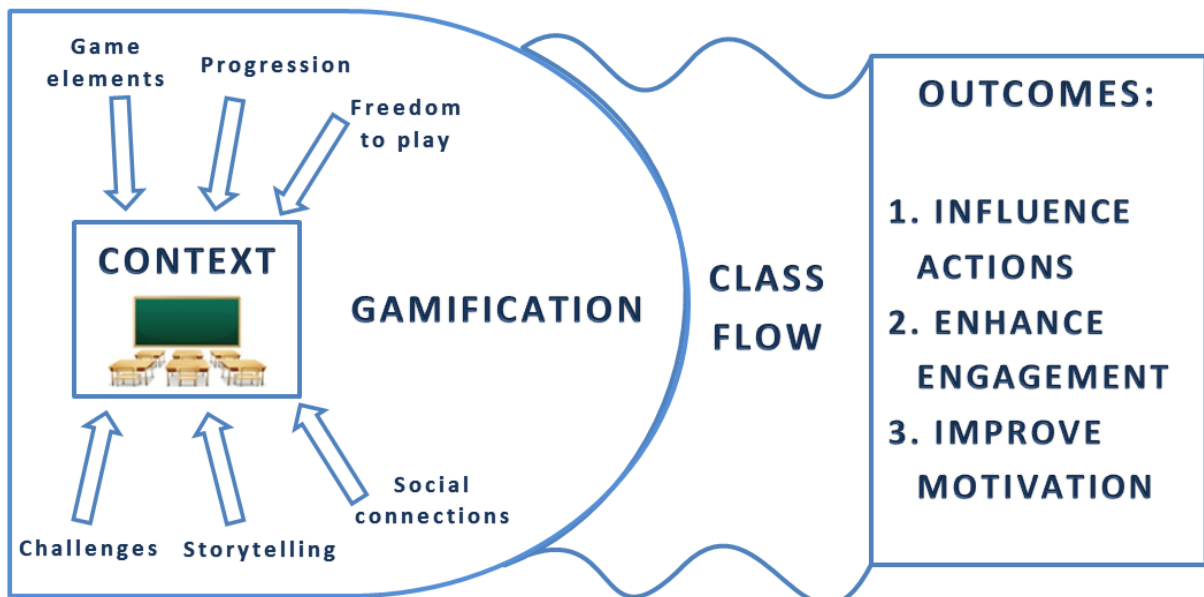


Figure 4: Illustration of game elements used in gamification, generating a state of flow to influence behavior, enhance engagement and improve motivation. Illustration made by the author.

⁸ The Fun Theory: www.thefuntheory.com

Educators have adapted the term to fit their needs in schools (Blake, 2009). It is relevant to notice that, although researchers had already discussed the integration of games and learning (Rankin, 2006a, 2006b; Williamson, 2008) the term gamification was not used before. In the next section we present some game types to clarify where gamification stands in the game industry and then we present the game elements taken from these game types.

2.1. Game Types

Games have been used in many areas in their different types. Gamification stands as another type of game that takes advantages of some elements present in the other types and presents a new use of them as defined earlier. The most common types are divided here according to their use, as defined by Kiryakova et al (2014):

2.1.1. Games:

Games in general are designed for entertainment. They comprehend all the other types of games although they are mostly aimed at the user's pure fun. Any game type can be used just for fun, and therefore can be called games.

2.1.2. Serious games:

Serious games are those designed for specific trainings or purposes. They can be used for fun and look a lot like real games, although they have a predetermined task. Brain games and some children learning games are examples of it.

2.1.3. Simulations:

Simulation games are also designed for specific trainings and therefore similar to serious games. However, these simulations happen in the real world. The most traditional simulators are flight simulators tailored to specific aircraft training. However, since then, the genre has evolved to funny simulators and any kind of real life simulation, such as truck, farm, and even goat simulators.

2.1.4. Game-inspired designs:

Game-inspired designs are not games, they are interfaces designed to look like games to engage interaction and motivation in a fun way. They do not strongly incorporate game elements, but merely produce game aesthetics. Examples of these are more commonly found in some websites, user-friendly applications, or progress bars in websites such as Facebook or LinkedIn (Figure 5).

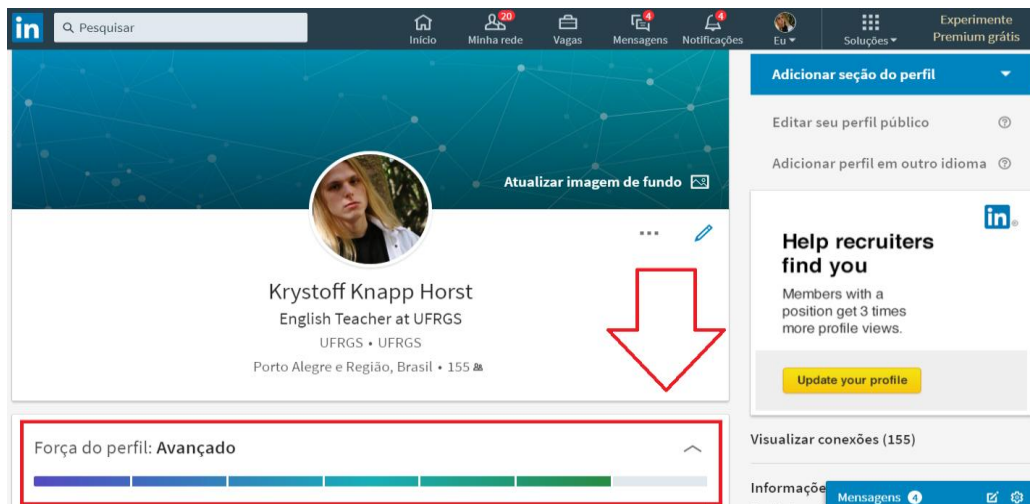


Figure 5: Profile strength bar in LinkedIn.

2.2. Game elements

As suggested by the types of games above, games vary according to their uses. In addition, games have elements that make them look i.e. more competitive, more engaging, or more story-based. Niman (2014) suggests that while game mechanics work on the micro level of a game, the game elements are macro. They are the frame structure and the way things are going to be presented. Game elements define whether the game is a puzzle or not, while how the game will be played is related to mechanics. Here we summarize these game elements and present applicable solutions for gamified classrooms (Exton, 2014; Landers et al, 2017; Niman, 2014; Piskorz, 2016; Stott, 2013; Kiryakova et al, 2014):

2.2.1. Freedom to play:

Freedom of playing comes in games as a variety of options. Niman (2014) defines as the choice architecture and claims individuals like to have freedom to explore and discover new things. Freedom of choice may comprehend multiple opportunities and possibilities of

repetition of the same task depending on context. Too much freedom may lead gamers to wander around the game without focus, while a set of just few choices may lead to frustration in case of failure. Repetition and multiple retakes of the same task decrease frustration. Freedom of choice generates a sense of agency in the gamer (Niman, 2014), as he or she is empowered to choose their path. This aspect is of utmost necessity in early stages of gamification so players can learn how to interact better with the choices and the results of their mistakes. Niman (2014, pg 91) provides a choice structure which includes verbatim: (1) flexibility in the choice set; (2) a set of well-defined choices; (3) limitations in the number of choices; (4) the existence of default choices; (5) clear outcomes associated with individual choices; (6) consistency between choices; (7) tools for making better choices; (8) assistance for making complex choices; (9) the possibility of correcting bad choices; (10) feedback for updating choices. The image below provides some of these structures from the game Fallout 4 (Figure 6):



Figure 6: Choice structure of Fallout 4 interactions.

The image shows a dialogue screen of the player with a NPC (Non-Player Character) who trades equipment with the player. We can see some features of the choice structures: (1) flexibility of choices: there is a list of story-related topics to be talked about; (2) there is a set of choices to interact with this NPC, other NPCs may have other dialogues; (3) a limitation of the choices: there are around ten possible answers the player can use, and the results are different; (4) there are default choices, since the NPC is a trader, the sentence “let’s trade equipment” is often shown as an option in the dialogue; (5) clear outcomes of choices: the option “goodbye” ends the conversation; (6) choice consistency: all choices seem reasonable according to the story and the given situation. A single screenshot cannot comprehend all

Niman's structures, since the outcome of the decisions is taken into consideration when analyzing each decision or choice made. More examples should be provided to better clarify it, however this is not the aim of this paper. Thinking about gamified education, choices are usually very restricted and in traditional classes choices are not even given to students. Course exams are mandatory and specific. The freedom to choose the kind of evaluation for example, according to what was suggested above, works as a motivator whenever the ten structures of choices are followed.

2.2.2. Agency

Agency in games is the degree up to which the player takes action according to their own objectives. In many ways agency and ownership are connected to choices made in a game, since playing the game involves player control and decision making. Stott (2013) argues that players make things happen and not just consume what is placed in front of them. Therefore, player autonomy is an outcome of their decision making. Students take decisions and are presented with the outcomes of them at every feedback given. When the student is presented with options, their individual learning objectives may be catered better. In this way, a student's autonomous choice is more meaningful and productive than the teacher's choice.

2.2.3. Rapid Feedback

Autonomous decisions can generate good and bad results and feedback is what tells it to the player. To continue playing a game, players always strive for positive feedback, failure is never an option. In this way, their needs for urgency and optimism are met, as suggested by McGonial in her TED Talk. Feedback is seen as critical in any learning process, and already happens in any classroom. Techniques for rapid feedback in the classroom range from peer-review activities to games quiz games. The difference in gamified classes is that, according to Stott (2013), this feedback is faster than in traditional classroom settings. Moreover, it is important to happen while the player takes decisions. Feedback on past and present activities provides safer choices and also encourages agency (Stott, 2013). Vygotsky (1978) suggested instructional feedback and collaboration are called scaffolding where a Zone of Proximal Development (ZPD) is created. This zone is defined as follows:

“the distance between the actual developmental level as determined by independent problem solving and the level of

potential development as determined through problem solving under adult guidance or in collaboration with more capable peers.” (Vygotsky, 1978, p. 86)

Rapid feedback techniques applied in games help create this zone and determine a sense of progression in the player whenever development is noticed.

2.2.4. Progression:

Feedback strategies and scaffolding, as suggested above also aid players towards progress (Stott, 2013). Not only these, but many game elements reflect in progression (K. Werbach and D. Hunter, 2012). Organizing content into levels or missions helps learners focus and avoid the feeling of failure. Progression in learning involves an organized set of thinking skills in the order they are evoked in our minds: identifying, remembering, understanding, analyzing, evaluating, critiquing, summarizing, composing, creating, designing, planning, and inventing (Stott, 2013).

2.2.5. Special events

Special events are situations in which the game takes a different path for a moment and creates a meta-game inside itself. Special events in learning can be bonus events, such as warm-up, or review quizzes, tick the board activities or any other task that alters the course of a narrative for a short period. Boss challenge events are also a type of special event that, similar to a test can be used to evaluate students.

2.2.6. Challenges

Challenges are an important aspect of the state of flow, as argued before, underchallenged students lose focus and become bored, while overchallenged students are anxious and frustrated due to imminent failure. Challenges fulfill most of human desires, according to Figure 2 (Innovation Edge, 2012).

2.2.7. Badges, rewards, and achievements

Badges and achievements are similar and can be used alternatively to name task completions. Usually badges are received when a new level or rank is achieved in a form of reward for some task. Ex. finishing part 1. Achievements usually stand for the repetition of actions or completions of a specific task. Ex.: doing all tasks from part 1. By receiving a badge or an achievement the gamer may also receive points in a grading system. Figures 7 and 8 show examples of badges and achievements respectively.



Figure 7: Counter-Strike: Global Offensive ranking and badges.

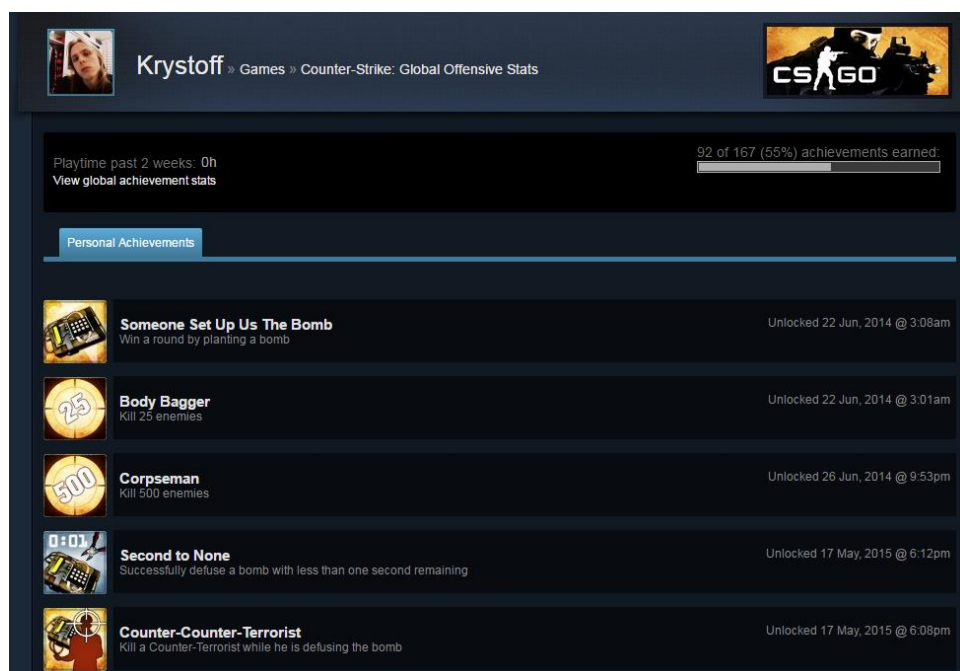


Figure 8: Counter-Strike: Global Offensive table of achievements.

In educational environments such as Girls or Boy Scouts, badges are common rewards for specific tasks. Everytime a lesson regarding a specific topic is finished, a badge can be granted. It is important to say that badges go beyond just simple grading. Badges are more subjective and contemplate topics and concepts rather than scores or numbers. These badges as well as achievements can be presented in real life in a classroom boards, or virtually.

2.2.8. Grading systems

Grading in games involve ranking and leveling gamers using game points or experience points. Usually games give points for finishing one task, or achieving a specific part of the game. These points can be translated into a number of types: (1) game points, (2) experience points, (3) money, (4) social points (allowing the gamer to interact with gamers in higher social levels), (5) karma points (doing good or evil actions), or (6) behavioral points (loyal-rebel inclinations, or others). Some examples of points are shown in three games here (Figure 9):



Figure 9: Different grading systems. First game (CSR Racing): social points, or respect points (RP); Second game (Fallout 4): specific points for different skills; Third game (Pokémon GO): experience points (XP).

The grading system in more complex games (i.e. Fallout 4) includes not only these but also a series of different points that enable better grading for specific tasks. Example: quiz points, in which more points mean more hints per quiz.

Klock et al (2014) suggest a large leaderboard with many players may demotivate. So, depending on the number of players, the grading systems may involve a leaderboard showing all participants or just the ones right over and right under the player.

Grading in classroom is usually a sensible topic to teachers, since grading is usually subjective and includes not only numbers. By giving different types of points, the teacher is able to understand what the skills the students need to improve are. While with the option of displaying them onto a leaderboard can welcome other game elements, such as social elements.

2.2.9. Social Elements

Massively multiplayer online games such as World of Warcraft (Blizzard Entertainment) involve complex social online interactions on chats and group task performances. The game provides a dense and complex thread of quests with storytelling and cooperation among players and non-player characters. Huang and Soman (2013) create a table on social and self-elements to exemplify the elements that push gamers into the game, and the elements that gamers strive to complete. Figure 10:

**Examples of Game Mechanics
(Self-Elements vs. Social Elements)**

Self-Elements (Complete Stage)	Social Elements (Push Stage)
Points	Leaderboards
Levels	Virtual Goods
Trophies/Badges	Interactive Cooperation
Virtual Goods	Storyline
Storyline	
Time Restrictions	
Aesthetics	

Figure 10: Social versus Self-elements table.

In classrooms, social elements should be highly valued due to the community involvement school proposes. Social dynamics include teamwork, cooperation, transactions, among other skills. Classrooms have for long strived to bring it to class, and games can help by bringing elements such as competitions, team tasks, levels, and leaderboards.

2.2.10. Storytelling

Most games present a form of narrative or storytelling, for example, Monopoly presents the story of the common person trying to get rich, SimCity builds the story of a city from an empty space. Stott (2013) mentions people learn better when the content is embedded in a story rather than in a bullet-point list. Storytelling in education is often found in simple math and physics exercises when a situation is present and students required to take a logical action.

2.2.11. Music and sounds

When connected to specific objectives, music and aesthetics create a sense of immersion (Linek et al, 2012). Agitated and fast songs for challenging moments, or calm and relaxing ones for imaginative and moments of creation is a clear element many games offer. Games such as FarCry, Age of Empires, or Epic Mickey are examples of well-designed game soundtracks and sound elements. Linek S. et al (2012) suggest background music has a positive influence on intrinsic motivation and the experienced flow in the game. In education, songs have been used for some time now as a teachers' tool to change the dynamics of the class, being it with filling the gaps activities or simply by singing a song. Gamifying with songs can change the level of immersion in a given activity as previously suggested. Such classroom gamification process may include i.e. freeze games when the song is paused, free writing exercises connected to different rhythms or drawing and imagining situations according to a given song.

3. ADDING GAME ELEMENTS TO THE CLASSROOM

In this chapter, we shall focus on developing gamification in additional language learning. We will first describe the most relevant software apps for classroom uses then, we present the outcomes of a research carried out to assess gamification potential benefits for the classroom. After that, we discuss techniques for creating a gamified experience in the classroom. Moreover, in the last subsection, we provide practical suggestions to gamify language classrooms.

3.1 Games and software tools

Games for the classroom as well as gamified solutions for classrooms are still few in the market. On the other hand, there has been an increase in the popularity of Learning Management Systems (LMS) which are considered gamified apps for offering options for leaderboards, badges, or awards. They are systems such as Moodle, Edmodo, Docebo, CANVAS, EduBrite, Blackboard, Accord LMS, and others⁹. They aim at providing a stable interface for the exchange of knowledge on the internet and on other devices. Some of their features may contemplate media content sharing, avatars, progress bars, levels, real-time feedback, communicative tools (ACMC and SCMC), classroom management, assessments, discussion boards, and forums. These are some of the game elements and mechanics suggested here in this paper. Taking into consideration LMS solutions, many are the possibilities for creating gamified environments in online classrooms. There are also other options for general education tools: Gradecraft¹⁰, Rezzly¹¹, and Virtual Locker¹². Kiryakova et al (2014) lists some of the most popular gamified options:

Socrative¹³ – a website for creating quizzes including questions of multiple choice, true or false, and short answers. The free version allows the teacher to create a classroom and share it with students that answer the quizzes created beforehand by the teacher. The interface of the website is not very sophisticated. The game elements included are: competition, points, feedback, and agency. The figure below shows the layout of the website for teachers (Figure 11):

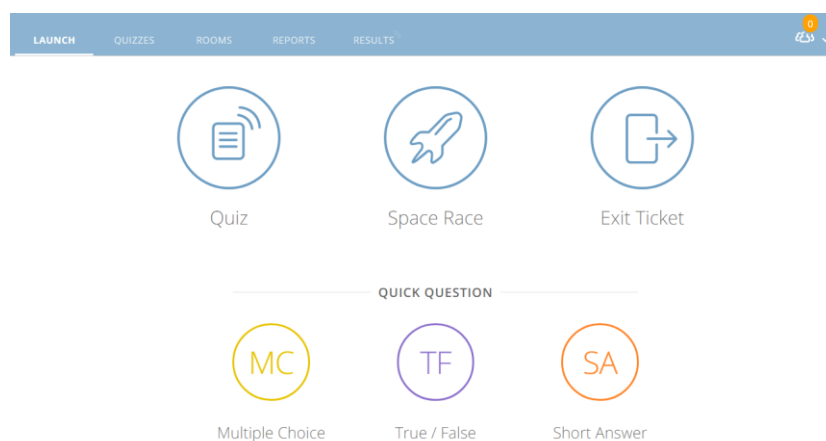


Figure 11: Sample screen of the teacher layout taken from Socrative.

⁹ Software list taken from Capterra: <http://www.capterra.com/learning-management-system-software/>

¹⁰ Gradecraft: <https://umich.gradecraft.com/> ;

¹¹ Rezzly: <http://rezzly.com/> ;

¹² Virtual Locker: <https://thevirtuallocker.com/> ;

¹³ Socrative: <https://www.socrative.com/> ;

FlipQuiz¹⁴ – it is a website that allows teachers to create flashcards assigned with different points according to the question. The player faces all cards and chooses one which is separated in categories and says the answer as he reads the question. Not many features of gamification can be seen, there are points and interaction in the game, competitiveness and fun also feature. The figure below shows the layout of the website for teachers and players (Figure 12):

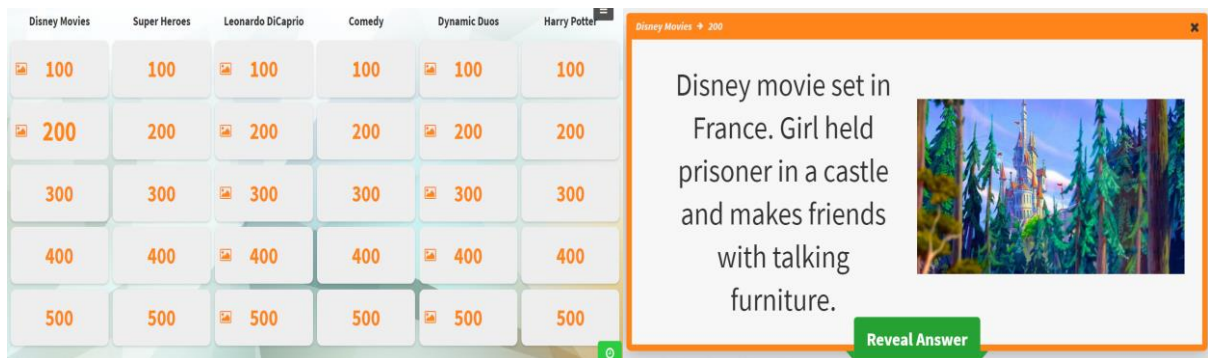


Figure 12: FlipQuiz sample cards and question.

Duolingo¹⁵ – is a famous additional language learning app. The app is well-gamified, containing many game elements, including: levels, badges, boosts, challenges, appointment dynamics, leaderboards, points (money and experience), agency, social interactions, and avatars. Unfortunately, not much of it can be easily used in a classroom since it focuses on self-study. A sample screen from lesson menu is shown in figure 13:



Figure 13: Duolingo lesson menu.

¹⁴ FlipQuiz: <https://flipquiz.me/> ;

¹⁵ Duolingo: <https://www.duolingo.com/> ;

Ribbon Hero¹⁶ – it is an app designed by Microsoft to gamify the help guide of Microsoft Word. The app is gamified with a story, levels, and points. The idea is to help users learn the functionalities of Microsoft Word. Illustration is shown below (Figure 14):



Figure 14: Ribbon Hero sample screens.

Class Dojo¹⁷ – it is a class management system, the teacher creates a group, adds students and assigns tasks in a history line where all students can access and see it. These histories can include audio, image, and videos, uploaded or linked from other websites. The teacher can also assign points for specific skills a certain student has, for example, teamwork, or persistence. Another interesting feature is the possibility of inviting parents to participate and see what the group is doing. Some of the game elements include social tools, avatars, and funny images. A screen from the website as shown to the teacher is presented below (Figure 15):

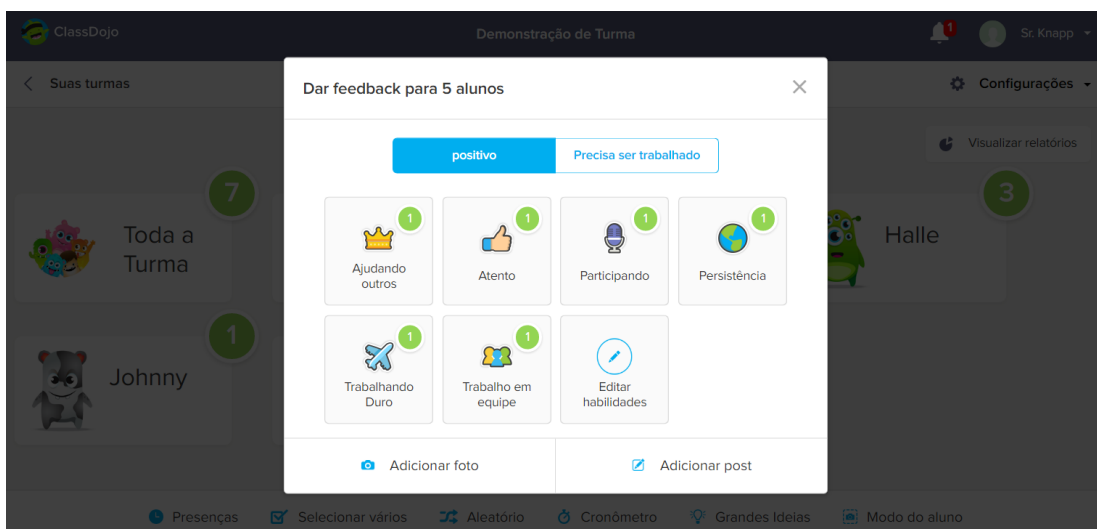


Figure 15: ClassDojo sample screenshot.

¹⁶ Ribbon Hero: <https://www.microsoft.com/en-us/download/details.aspx?id=26531>

¹⁷ ClassDojo: <https://www.classdojo.com/>

Classcraft¹⁸ – it is a classroom management system based on Role Playing Games (RPG), which are story-based games where players are presented with some sense of freedom to face situations impersonating characters from the story. In this environment, teachers create a classroom and students interact with their predefined avatars (warrior, healer or mage) from their cellphones and tablets. Each avatar has special powers that bring benefits to some class interactions, such as boss battles, quizzes, and others. The website is very complete in terms of gamified elements through experience points, levels, badges, avatars, social interaction and challenges. The screen below presents what the teachers see when managing students (Figure 16):

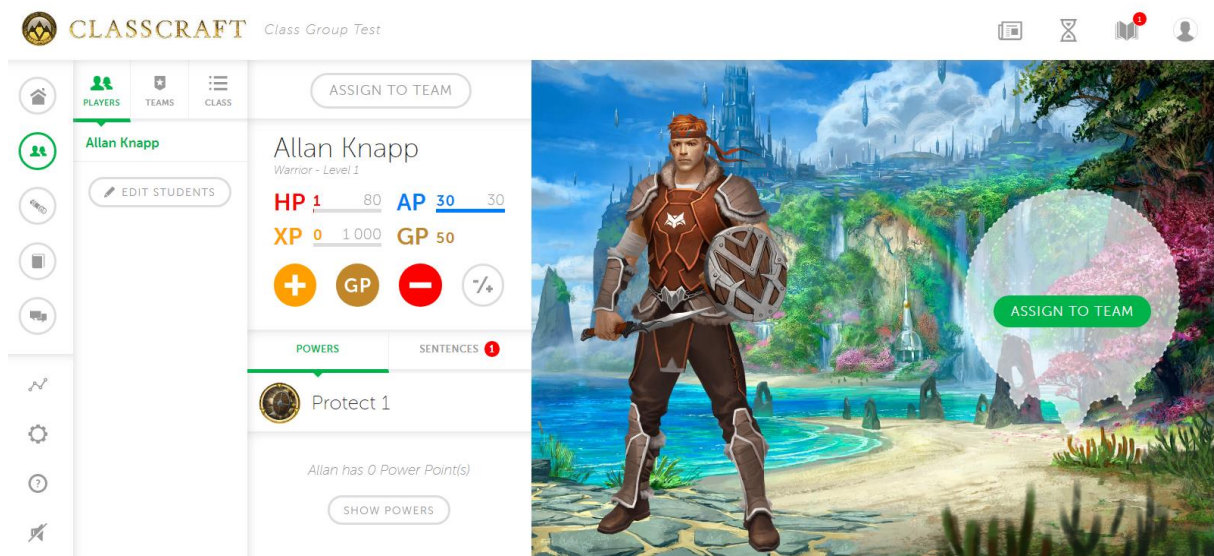


Figure 16: Classcraft screenshot.

Kahoot!¹⁹ – is an online free app accessible for teachers and students in any topic. To use it in the classroom the teacher needs a computer, a projector, internet access for the class. The students will only need their cellphone devices connected to the internet. Questions posed by the teacher are shown on screen (Figure 20) and participants give their answers on the devices (Figure 21). The game elements include: competition, feedback, relationship, leaderboard (Figure 22), and points.

Considering Kahoot!, a relevant research was conducted by Piskorz (2016) to analyze the outcomes of its use in the classroom. Piskorz's research question focused on the potential of gamification and what makes gamified learning useful in class. The experiment was composed of 112 students with an upper-intermediate level of English at the Pedagogical University in Kraków taking General English courses and from different areas of study in the

¹⁸ Classcraft: <https://www.classcraft.com/>

¹⁹ Kahoot!: <https://kahoot.it/>

university. Students had one to three contacts with the app in different moments of the course. The questions used on the app were of a grammar nature, covering irregular verb forms, question formation, passive voice in various tenses, reported speech, conditionals, and subjunctives. According to the researcher, these structures often create problems to students.

After each game played on the app, there is an option to rate the use of the app. On this screen students rated from 1 to 5 stars how fun the experience had been, answered if they had learned what they were supposed to learn, and if they would recommend it to others. The results are presented in a pizza chart as follows (figure 17):

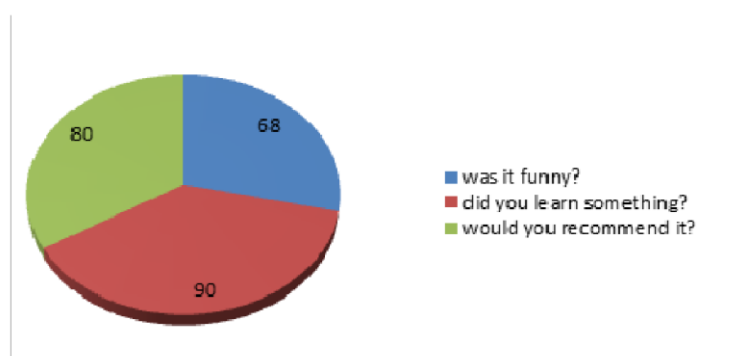


Figure 17: Percentage of answers. The number in blue was the percentage rated 5 stars.

Taken from Piskorz (2016, pg 28).

By the high acceptance numbers in the figure, Piskorz concluded that the effect of the app was significant to students (90%), suggesting that even when difficult grammar is involved gamified environments increase learning. The recommendation levels were good numbers due to its future implications, the number implied that traditional grammar learning exercises are less involving and gamified apps would be welcomed and recommended. The levels of fun, around 70%, could also be considered good levels, and may not have achieved better numbers due to the competitiveness inherent of the game type. A final question on the app was about their general feelings towards it (not shown in Figure 17). The app presented three icons: happy, indifferent or unhappy: 67% said they felt happy, 11% neutral and 6% felt negative. Unsuccessful students may have felt less excited by the app, according to the researcher.

In addition to this rating system, a second questionnaire was implemented to better assess their knowledge of online language games, motivation, and fun. The results showed that 95% had never used language learning games at home, 88% had never used them in class, and 99% of them mentioned they would use language games in the future. This shows how unfamiliar students are to online class games, and how much this use is welcomed. The next

question in this extra questionnaire was how much Kahoot had motivated them to learn: 43% answered very much, 30% quite, 19% mildly, and 7% slightly or not at all. The reasons for this motivation were also measured, and the results are shown here:

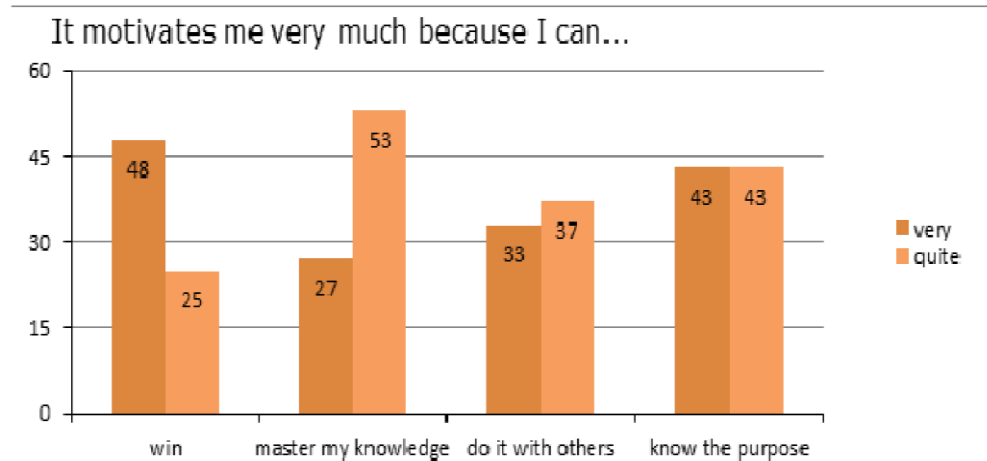


Figure 18: Reasons for motivation. Taken from Piskorz (2016, pg 30).

We can see by the results that the reasons vary a lot, and no specific reason could be measured. It may suggest that the motivation derives from more intricate and complex relations than the research could measure. In a last question, it graded levels of fun, stress, and interest, as well as if they could learn something through a game, and whether the use of the game was better than traditional class grammar exercises. The results are also shown here:

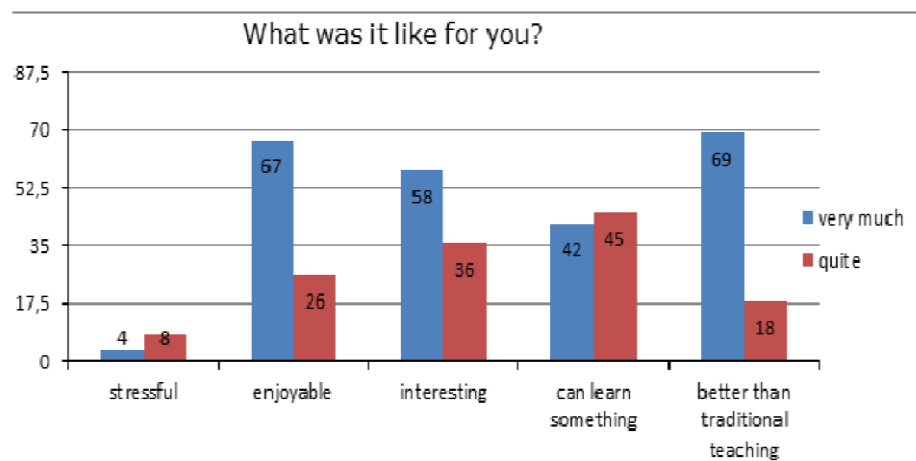


Figure 19: Levels of stress, fun, interest, learning, and traditional X gamified class.

Taken from Piskurz (2016, pg 31).

What is quite impressive in the graph is the last topic, students in general considered the method to be better than traditional teaching, which aligned with the high levels of enjoyment and interest mean the gamified experience was good for them.

To better clarify other aspects of the game we offer some additional details of the paper (Piskorz, 2016). We can easily agree with her on the students' eagerness for gamified experiences in the classroom due to the high levels concerning this topic on the questionnaires. And, as for the positive results towards fun, interest, and learning its use seems pedagogically justified.

Concerning some game elements present in Kahoot! and their application in the classroom we can provide some useful insight. The time to choose answers is also measured and more points are given for faster answers, which has to be refined for students with slower reaction levels. Although for most ESL classes the speed of the choice does not seem relevant since the right response matters more, this adds to the competitiveness of the game.

Game points in the app provided an easy grading system, as the teacher could make timely assessments on who answered what assisting those with feedback on the topic and reinforcing positive answers. This feature is relevant also due to its connection to scaffolding (creating a ZPD), which can help build the autonomy in the students leading them to better choices. To illustrate this moment in the game a screenshot was taken. The following screen is shown after all students have finished answering or when time is up, and only when the teacher clicks on "next" that the game resumes (Figure 20):

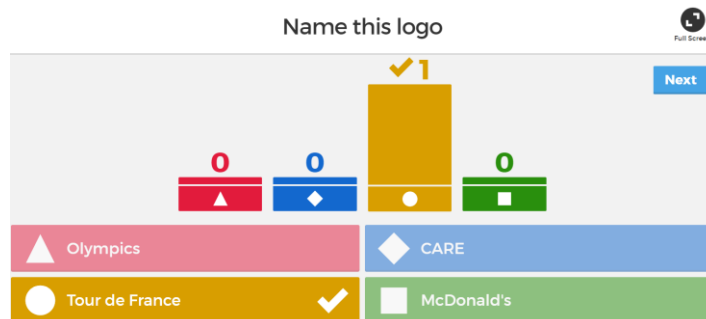


Figure 20: Kahoot correct question as shown to the class.

Screenshot taken from the game.

Agency, another game element, is also present in this gamified scenario because of their individualized answers as well as their nicknames in the game. Each student holding a cellphone makes this a very personal and engaging moment and by not socializing their reasoning for the choices they are forced to think by themselves. For a clear understanding on the game visuals see figure below:

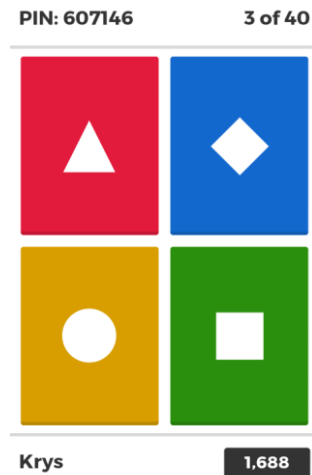


Figure 21: Kahoot choices as shown to the player.
Screenshot taken from the game.

Leaderboards are suggested as a game element that increases competitiveness. The scoreboards are shown after the screen on figure 20, and are similar to this:

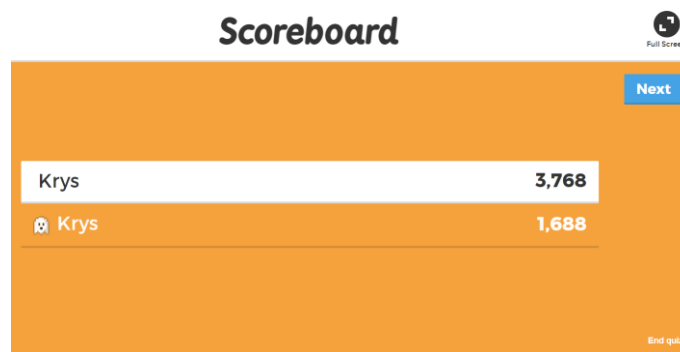


Figure 22: Kahoot scoreboard.
Screenshot taken from the game.

Another game element in Kahoot is badges given to the first place (a “hoo” badge), second place (a “ka” badge), and the third place (a “t” badge). Since the name of the badges stand for the name of the game a fun element is added. Music and sound effect, both are also present in the app and certainly alter the engagement the game proposes with agitated and curious sounds in different game screens.

3.2. How to design a gamified experience in a classroom

Here, we aim at providing suggestions to educational or instructional game design in classrooms according to Tang and Hanneghan (2014), early versions of instructional games were proposed as interactive courseware which included mini-games such as puzzles and

memory games, attempting to inject fun into learning. These were always advised as a way to enrich classroom experience, although gamification processes were still insipient. Gamifying activities and designing games are often thought as a craft, and game developers are brilliant at creating triggers and hooks to engage players. We can divide educational game design in thinking on two main objectives: instructor (more educational) or entertainer (for entertainment rather than learning).

In order to organize the steps taken to achieve a well-gamified solution, some overall steps are shown (Klock et al, 2014; Kiryakova et al, 2014; Werbach and Hunter 2012; Tang and Hanneghan, 2014). As in any other student-centered approach, the first thing to be looked at is the student, or, when we think about gamification, are the players. Kiryakova et al (2014) states that by doing so we define the students' predisposition to interact with the game element proposed and can model it beforehand. Another relevant factor is to assess which skills required by the students are involved in the gamified process. Tang and Hanneghan (2014) propose the following methodology for creating an educational game (Figure 23):

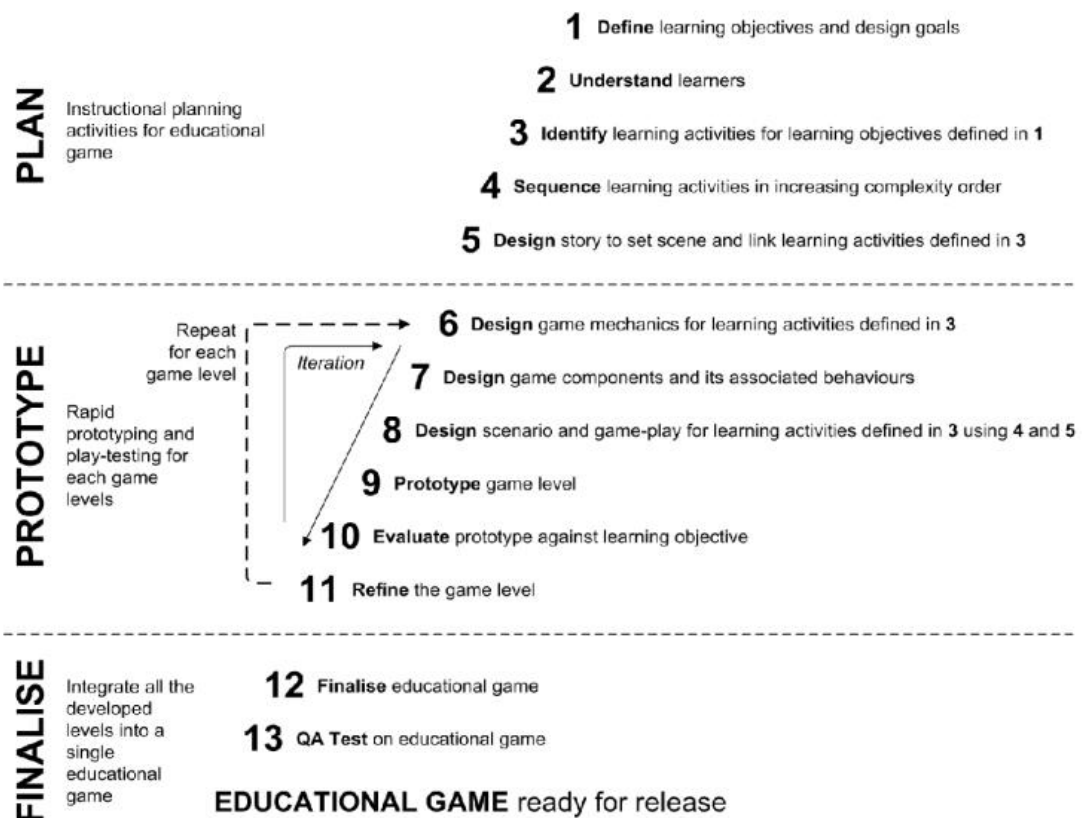


Figure 23: Educational Game Design Methodology according to Tang and Hanneghan (2014, pg 189).

It is relevant to pay attention to the plan and prototype sections, since they can encompass a great deal of the class planning teachers usually face. If we consider that gamification is somehow new to students, as suggested by Piskorz (2016), planning is of utmost necessity for the class. As for the first steps in planning: defining clear goals, understanding learners, identifying learning activities for the goals, sequencing them into increasing complexity, and designing a story to set the scene. In the planning section the only different step from the ones teachers usually face seems to be designing a story to set the scene, since planning a class should always involve more active methodologies, specific goals, attending to learner's needs, activities and sequencing. The designing of the story suggested in step 5 from Figure 23 specifies a form of game dynamics which are general abstract ideas of a game that deal with a general perspective of it (Werbach and Hunter, 2012). Game dynamics are general aspects of the gamified system, such as emotion, progression, or relationship. When one specific dynamics is chosen, to be seen as an objective within the gamified system, the game mechanics and game elements will derive from it.

In the prototype section of Figure 23, game mechanics and game components are assigned, game mechanics involve general interactions, such as challenges, cooperation, game turns, or competition. Game mechanics can be connected to one or more game dynamics. Game components, on the other hand, can be the same as game elements and stand for smaller and more specific detailed forms of game mechanics, such as points, level, combat, or quests (Werbach and Hunter, 2012, pg 79). Game components can also be attached to one or more game mechanics or dynamics. These steps have to be applied in the order proposed, so to come from a macro perspective of game mechanics, to smaller details of game components. This hierarchy is proposed in the following image taken from Werbach and Hunter (2012). Figure 24:

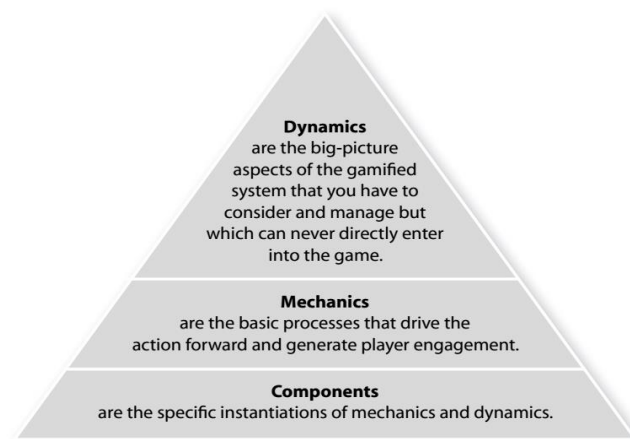


Figure 24: Game Element Hierarchy. Taken from Werbach and Hunter (2012).

The steps in this section are related to educational game design (learning games) and not much to the design of gamified solutions for the classroom (gamified classroom). Nevertheless, some of the steps can be taken if a gamified course plan is to be created. From this educational game design methodology (figure 23), to exemplify the method, we can imagine the following gamified solution:

1. Defining the learning objective: the passive voice.
2. Understanding learners' difficulties: they may have problems regarding verb to be in the passive voice (was, were, are, is, am, been, being).
3. Identifying activities: gathering possible activities to cater for student's needs: identifying passive or active voice, passive sentences matching forms of verb to be, gaps filling exercises with verb to be, gaps filling exercises with verb to be and main verb, change complete sentences from active to passive.
4. Sequencing activities: 1 - identify; 2 - fill in gaps; 3 - change active to passive, and so on.
5. Designing a story: an imaginary "Mr. Be" (verb to be) lost in the "city sentence", trying to get somewhere.
6. Designing game mechanics: cooperation and feedback: students try to identify where Mr. Be is, the teacher provides feedback.
7. Designing game components: scoring, one point for each verb "to be" identified correctly in a sentence.
8. Designing the scenario: a board or map divided into "road sentences" in the passive and in the active voices. Mr. Be is lost in the map and takes different road sentences. This builds into a narrative and emotions, the two possible game dynamics involved so far.
9. Prototyping game level: in the first level the roads are identified as active or passive.
10. Evaluating: when all the roads are identified the level is complete.
11. Refining the game level: new "road sentences" with different tasks are proposed, gap filling activities in the same context. The steps 6 to 11 can be repeated to create new levels.
12. Finalizing: develop the game; create the board using PowerPoint or cardboards; create sentences and the pins for the players.
13. Testing: experiment in one class.

In this short example, the students go from simple tasks, such as identifying passive and active constructions, to more complex ones, changing to passive or active while involved in a gamified environment. These characteristics seem connected to what Kiryakova et al (2014) suggests the activities in a gamified classroom should allow for: (1) multiple performances (repetition); (2) feasibility (achievable goals); (3) increasing difficulty levels (more complex tasks); (4) multiple paths (different skills in learners, building strategies and autonomy). Creating a gamified system for the classroom may seem a long process for some teachers bigger and varied groups, because of this, the next section will provide more practical possibilities for the classroom.

3.3. Other gamified possibilities

As previously mentioned, gamified solutions in the classrooms may not always bring technology into the classroom. Here we aim at generalizing some game elements and providing easier and more practical possibilities that any teacher could benefit:

1. Grade from 0 to 10. Instead of giving “10” or “A” for a well-completed task, grade it assigning 1 point. After that, create the other tasks progressively so that one adds to the previous one. This way the students are going to seek point by point rather than accept they are already 100% on that topic.

2. Let your students build the gamified solution too. Especially in gamified storytelling, when a lot of the interactions have to come from the students, the choice of the class, regarding environment and characters can be better than the teacher’s choice.

3. Include Easter-eggs. Easter-eggs are surprises and hidden messages in a game, they are not considered a game element, but add fun to the game. In educational contexts, they can be a combination of letters in a sentence forming another word, a joke about an external element. It is something that they have to interact or say it in order to find it. After they find it, assign points.

4. Adapt old games to the class. I dare to say any game can be brought into the classroom, as long as the teaching objectives and the students’ interest is kept. Old school games, such as memory and crosswords are the most common. But other games as basketball and volleyball can also be in the class. It is only a matter of changing the game elements to fit the context of the classroom.

5. As games are often difficult to play, the teacher role is paramount. Do not hesitate and change some rules during the gamified process so as to improve the game.

6. Assign a class as a trial version of the game. Do not think your gamified experience will be mastered by the students in one class. They can even help you create better solutions.

7. Gamify outside the classroom assigning gamified homework. Many classroom management systems were presented in the previous sections; they may increase motivation away from the classroom.

4. FINAL CONSIDERATIONS

This paper aimed at exploring gamification in education discussing its alleged benefits in additional language learning while proposing ways for teachers to apply it in the classroom. Section 1 introduced the relevance of active approaches to education. In section 2 the term gamification was defined, and game types and its elements were presented. Section 3 discussed game elements in additional language learning classrooms.

Gamified classrooms are consonant with active methodologies and therefore could be used by many teachers willing to be updated with their students' worlds. Gamification in education is an emerging area and brings benefits to the classroom as suggested by the Piskorz's (2016) research. Some game elements are more naturally inserted into the classroom, such as challenges, leaderboards, points, rewards, avatars, and fun, all these game elements were explored by Piskorz (2016). On the other hand, elements such as storytelling and freedom of play seem to be more difficult to be inserted in a gamified class and therefore its researched benefits are scarce. Although storytelling already happens in some classrooms, especially with kids, the interactions of game mechanics and storytelling are more challenging than a gamified quiz game due to the possible breakdown of the narrative. However, more studies concerning the connections between education and gamification need to be done to better understand the ways in which gamification benefits the classroom.

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