

# Gamifying Linguistics Courses in Non-Technological Learning Environments A Case Study

Zohra Labed\*<sup>1</sup>

<sup>1</sup> Ecole Normale Supérieure d'Oran (Algeria), E-Mail: labed.zohra@ens-oran.dz

Received: 24/10/2021

Accepted: 07/11/2021

Published: 23/12/2021

## Abstract

One common course subject to foreign language undergraduate students' complaints in Higher Education is probably linguistics. Educational technology tackles the issue of students' demotivation in such courses, and suggest gamification as a 21<sup>st</sup> century pedagogical problem-solving strategy. Special emphasis has been placed on Internet-based gamification responding effectively to different learner's needs and styles. Yet, gamifying education in non-technological settings, where access to digital tools is limited, is still in its infancy. The objective of this qualitative research was to explore the use of gamification in linguistics courses in such environments. An experimental case study on student-centred gamification involved twenty-three EFL learners of pre-service teacher education, at Oran Higher School of Education, Algeria. The findings included different gamified designs namely, graphs, images, drawings, puzzles, and videos. I finally proposed to use Lom's Active Learning Strategies framework as a possible effective way to implement gamification in the classroom.

**Keywords:** Gamification; Pre-Service Teaching; Linguistics; Student-Centredness; Non-Technological Environment.

## 1. INTRODUCTION

The term *Gamification* originally comes from the digital media industry. It was employed for the first time in 2008 and started to gain

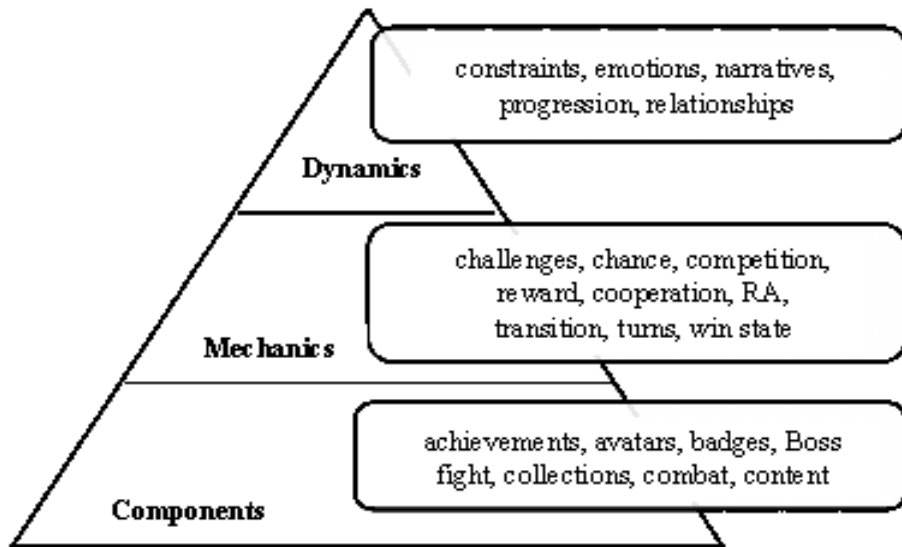
academic popularity only in the second half of 2010 (Deterding et al., 2011). As a 21<sup>st</sup> century teaching strategy for foreign language (FL) learning, the concept is defined as “... the use of game design elements in non-game contexts” (Deterding et al., 2011, p. 9). Obviously, this definition combines four key terms: game + element + design + non-game contexts. Games are rule-governed, have a goal, and encompass voluntary participation. The elements of games are identified as “... elements that are *characteristic* to games – elements that are found in most (but not necessarily all) games, readily associated with games...” (Deterding et al., 2011, p. 12). The proficiency level of the learners goes through a gradual shift as the result of progression Dynamics (see 1.1). The gamified activities expose them to different subsequent experiences with the aim to make them improve in their learning process.

Another key term in the definition of gamification is game design which fundamentally requires creativity, art and, therefore, originality (see Figueroa, 2015). As a multifaceted concept, on the other hand, gamification has been applied to diverse non-game settings not basically conceptualised for game, such as marketing, advertisement, medicine, (higher) education, army and sport, to realise certain specific internal objectives. Gamified activities in (higher) education, in particular, raise the users’ motivation (see Labed, 2020) and engage them in new learning experiences. For example, they, together, allow the FL learner to experience entertainment and, at the same time, achieve the learning purposes, unlike serious games that have entertainment objectives only.

### **1.1. Game Elements**

Werbach & Hunter (2015) present the game elements in the form of a hierarchical pyramid, including Components, Mechanics and Dynamics as shown in the Figure below.

**Figure.1.** Werbach & Hunter’s (2015) Game Elements



(Source: Werbach & Hunter, 2015)

The highest level of gamification is Dynamics. It serves the players as a guidance to fulfill the essential conditions for maintaining the learners' engagement. My participants opted for Narratives (the gamified activities have a story told to the learners to get them enjoyably involved in learning a particular lesson); Relationships (gamification brings the students to interact, learn from one another, and therefore understand and perform better). As for Mechanics, they are expected to implement the Dynamic game element. They allow students to move from the abstract level (Dynamics) of gamification to the action plan. My participants made use of Challenge as a representation of Progression Dynamics, while employed the Mechanics of Competition and Cooperation to represent the Dynamics of relationships.

As for challenges, they do not need to be far from the learners' problem-solving abilities, although they require effort on their part to cope with their gamified exercises or activities. They also help create a competitive atmosphere among the learners, a fact which makes them more easily learn from one another about the topic. Other learners, contrarily, may cooperate to tackle these challenges by seizing opportunities offered by the gamified activities to win or lose together. If challenge, competition and cooperation are Mechanic representations of Dynamics, Components

superficially represent Mechanics. Some Components used by the present participants are Avatar (the graphic representation of a particular character); Point (it marks the learner's progression in the form of a number); Team (cooperative gamification learners form a team).

## **1.2. Problem Statement**

Internet-based gamification has grown in popularity in recent decades. In foreign language (FL) education particularly, it has emerged to respond to the requirement of the new digital generation who were born after the Internet emergence, and therefore virtual technology makes part of their everyday life. Online learning systems and devices are required for piloting educational gamification practices and activities. However, many parts of the world are still described as non-technological learning environments due to their restricted access to the Internet at the level of their educational institutions. According to Maddux (2002, p. 10) (quoted in Hegelheimer & Fisher, 2006, p. 260), technology is two types: Type I uses “make it quicker, easier, or more convenient to teach in traditional ways while Type II uses make it possible to teach in new and better ways that are not otherwise available”.

In other words, all the technologies that appeared before the Internet represent Type I whereas the Internet technology is Type II. Although diverse non-technological settings can dispose of Technology Type I, making educational use of the Internet facilities, or Technology Type II, in these places is still a long way from reaching. So far, these contexts have been poorly investigated and need, therefore, special attention. This paper tries more particularly to find a solution to a paradoxical challenging study case in Algeria. Obviously, Algerian English foreign language (EFL) learners are aware of their learning environmental situation as being non-technological. Despite this, many of them claim their dissatisfaction with their traditional process of learning subject courses, specifically linguistics, and ask for accommodation to modern strategies.

## **1.3. Research Questions and Hypotheses**

During my time as a linguistics teacher, I noticed the Algerian undergraduate EFL learners recurrently expressing discontent with traditional instruction of this subject matter, and their claim of finding other motivating ways that could make them enjoy their lectures. The idea of conducting this research, in fact, came from observing students interested in using game elements in the classroom. So, I thought that it would be worth checking this observation in a more scientific way and learn more about gamification in the literature. The present research questions were as follows,

- (1) How can the courses of linguistics be gamified in a non-technological educational environment?
- (2) How can gamification be implemented in the near absence of digital technology in their educational setting?

This paper aimed at breaking away from routine traditional classroom by introducing a gamified course of linguistics. As active learning “... advocates contend that when students *do* something they learn it better than if they hear about it” (Lom, 2012, p. 65), I opted for making the study more student-centred to achieve a better understanding of linguistics by the learners. Thus, I made the hypotheses below,

- (1) Since linguistics is a scientific discipline, linguistics courses could be gamified by the pre-service teachers using graphic designs.
- (2) I propose the model of Lom’s (2012) Active Learning Strategies as a framework to implement student-centred gamification in linguistics in the present setting.

## **2. Algeria: A Non-Technological Learning Environment**

The efforts made recently by the Algerian authorities to update education for the digital age are incontestable. However, Algeria is still considered as a non-digitalised learning environment by recent literature (e.g. Fekih, 2018; Sarnou, 2020). Due to certain undeniable obstacles that stand in face of the educational technology in the present context, the integration of digital tools becomes possible if only carefully studied and well-planned. In their case study of Fijian schools as non-technological

environments, Gani et al (2019) talked about the challenges facing the implementation of technology in education. These challenges are probably resource availability, teacher education, student comprehension, and student access.

Regarding resource availability, Fekih (2018) conducted a mixed-methods survey to investigate Algerian EFL teachers' perspective on dyslexia from various middle schools in Algeria. The findings confirmed a serious deficiency in integrating technology in the Algerian education and proved that the foreseen objectives were still a long way from being met. In the current setting, the use of educational technology could be related to Type I (films, radio, television, overhead projectors, and computers) which are, in fact, employed mainly to support the teacher-centred classrooms (Maddux, 2002) (reported in Hegelheim & Fisher, 2006). Sarnou (2020) asserted that the modernisation of Algerian education is not only restricted to providing classrooms with technology materials. Modernising the Algerian educational sector requires changing the perceptions of people in charge of it. Educational curricula, according to the author, are also in need of personalisation according to the skills and needs of the 21<sup>st</sup> century learners.

In the case of instruction modes and following the study of Fekih (2018), Algerian EFL teachers persist in their use of traditional implements (e.g. chalk, whiteboard, handouts) and still do not adequately exploit technology to fulfill the actual needs of their digital learners. According to the study participants, many Algerian teachers do not have a good mastery of technical devices and lack the relevant training of technology management to account for the learners' needs and styles. They also lack the motivation of incorporating technology in their teaching. This motivation can only be raised, according Fekih's participants, if teachers realise that there is an urgent need for technological integration in education.

As regards students, comprehending how to implement technology is challenging in their learning process. Although "...the majority of students –mainly of middle/secondary schools and universities –are familiar with the

use of different social media, they do not use their electronic devices, be it the smart-phone or the laptop, in the correct way of getting reliable data to fit their academic needs” (Sarnou, 2020, p. 4). The limitation of access to the Internet is another constraint faced by students, and the educational community in general. Personal mobiles are increasingly connected to the Internet which is, by contrast, unavailable in classrooms. Even if wireless fidelity, or Wi-Fi, is a networking technology which currently provides Internet at home or in many other places, the Internet speed and the quality of Internet connectivity are problematic many times a day. Online interruptions occur and prevent the process of learning from taking place in appropriate pedagogical conditions. Students’ demotivation can be easily stimulated to abandon remote academic duties.

### **3. Methodology**

This paper, as indicated earlier, tries to answer two research questions. The first one is interested in the way the courses of linguistics could be gamified in a non-technological educational environment. I hypothesised that my pre-service teachers could use gamification in their setting in the form of graphic designs, given that linguistics is a scientific discipline. My second research question deals with the possible way to implement gamification in this same environment. My proposition is to use the framework offered by Lom (2012) on Active Learning Strategies to implement student-centred gamification in this non-technological environment. In this section, I outline how the present study was designed in terms of methodological choice, research strategies, time horizon, data collection, and the results. Also, the participants will be further identified.

#### **3.1. Study Design**

The objective of this qualitative research is to explore the use of gamification in linguistics courses in non-technological educational environments. An experiment took place to tackle the first research question and explore the way the participants could gamify their course of linguistics in their setting. It “... can be defined in an open way, as a social intervention into a person's life for the purposes of systematic exploration of an underlining structure” (Wagoner, 2015, p. 34). The author adds that

the experimenter is able to control only certain aspects of the current situation. “Participants arrive in the experimental situation with a certain history, mood, and character, and are themselves constructive in making sense of the experiment and deciding how to be involved in it” (Wagoner, 2015, p. 34).

This cross-sectional study case was undertaken during the academic year of 2019-2020 at Ecole Normale Supérieure d’Oran (ENSO), *the Higher School of Education of Oran* in Algeria. It is a higher education institution that offers to students a pre-service teaching training throughout which linguistics is taught as a compulsory module. I had taught second year linguistics for five years, since the school opening in 2015. Such a teaching experience, I assumed, could help me to work on this subject matter as the focal point of this study. The syllabus of second year linguistics that I taught revolved around the history and emergence of linguistics as an autonomous discipline. The learning objective is defined as displaying the relationship between linguistics and education through time. Linguistics is still delivered as a weekly lecture of one and a half hours without tutorials. Forty-five hours is the yearly contact hours required to accomplish a second-year linguistics course.

### **3.2. The Participants**

The present experimental case study involved twenty-three participants (second year students who all accepted to voluntarily participate in the present study), three males and twenty females, aged between seventeen and twenty years. They are currently enrolled in the department of English at ENSO to read for a five-year teaching degree. Although the sample size seems small, this population is expected to have an important influence on multiple generations of pupils in their future teaching career: They are granted a teaching job contract assuring their teaching position at the secondary school right after graduation.

### **4. Results and Discussion**

My pre-service teachers’ choice fell on eight of them (one male and seven females) to participate in the design of linguistics course



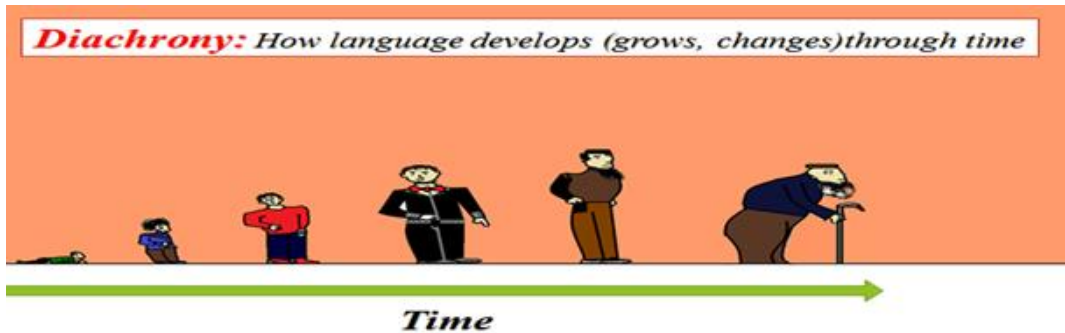
gamification. The other students who constituted the majority claimed that they would be content with applying this gamification. This experimental division among the participants was not expected. As for the gamifying participants and as part of their learning autonomy, they could work on any part of the linguistics course and apply gamification the way they found it more appropriate to enhance their understanding, raise their motivation, and, therefore, get them more engaged in the learning process. One particular observation during the classes was that the gamifying participants were competitive. This experience created, among them, certain enjoyment perceived clearly through their loud laughter and shouts when asking one another about their progression. Another unexpected result which partially invalidated the first hypothesis was how linguistics course was gamified by the participants. Unlike my hypothesis, the graph was not the only students' gamifying activity, but there were also puzzles, images, drawings, and videos that were designed by the gamifiers to deal with their lectures in linguistics. Name initials will be employed, below, to refer to the user of each gamification technique, under the permission of the participants in question.

#### **4.1. Drawings**

FB has been a drawer since her childhood. It is her hobby to imagine and personify concepts. Therefore, she found it useful to study her lectures through drawings on the basis of the game element dynamics, narratives. During the delivery of different linguistics lectures, it was recurrently mentioned by the teacher that change is inescapable, and as the human changes constantly, moving from babyhood to childhood, then adulthood, and finally old age, the language is similarly exposed to change. This was also to simplify the meaning of diachrony raised by the linguist Ferdinand de Saussure (1916) in relation to language, i.e. language evolves through time. The female gamifier, FB, made also use of the game element Component, avatar, and based her drawing on this analogy which resulted in the following figure. Like Mankind, language is born, develops, reaches its peak of growth, and then starts gradually losing its usefulness until it

disappears, a process which was survived by countless former languages, such as Greek and Latin.

**Figure.2.** A Gamifying Drawing of the Notion of Language Change



## 4.2. Images

Another activity was gamified by a female informant, H G, who opted for inserting images, in the form of game elements including avatars, and matching them to their corresponding words. Apparently, she was interested in knowing further scholars and linguists in particular while talking about their writing productions on language. Linguistics is undeniably a science which requires the use of the passive voice in the sense that the resultant deed is scientifically more important to be known than the doer. However, the participant's activity shows that linking first names to their family names, and then people's images to their matching full names was, for her, an interesting technique to challenge (Mechanics) the students' memory and gain their interest in the lectures in question. Rather, she wanted to share her idea with her classmates as shown in Figure 3, and this could be her tactic of criticising this way of teaching linguistics with the use of the passive voice.

**Figure.3.** Gamifying Linguistics by Using Images



4.3. Videos

Other four gamifiers favoured making videos by transforming their lectures into animated images. Three of them were females who cooperated (Mechanic game element) to work as one team (Component game element) on one video about the first lecture *Traditional Grammar*, while the fourth one was a male gamifier who created his own video on the same lecture. L. H. D, L. K, and I. M mainly relied on three animated cartoon characters explaining traditional grammar in its era using their (these participants’) voices. They might have also done so to practice the target language (EFL). They also used a smooth music while talking possibly to avoid any gap that could be felt by the audience. The first character on the video explained that she found it difficult to revise linguistics for her exams, so she and her partners thought of making a video and sharing it with their classmates for a better understanding of their lectures. In the video, the gamifiers used captions, images, maps, geographical areas, space, graphs, and shapes among other tools. Figure 4 displays some of their video screenshots,

**Figure.4.** Female Gamifiers’ Video Screenshots



Unlike the female participants’ video, which lasted six minutes and fifty-one seconds, the one of the male gamifier, A. T, lasted two minutes and seven seconds. This was perhaps because the latter was on his own, whereas the former formed a cooperative group. Besides, A.T used nearly the same instruments like his female participants (e.g. maps, geographical space, images, animated cartoon actors). However, he made use of neither music nor voice. He might have attempted competition (Mechanic game element) with the former group by placing more emphasis on the practice of linguistic levels (e.g. grammar) and their relevance in his quotes, questions and answers. Some screenshots of his video are found in Figure 5.

**Figure.5.** The Male Gamifier’s Video Screenshots



4.4. Graphs

I came across the fact that drawing is not the only hobby of F. B. She is also fun of summarising her lectures in the form of graphs, which partially validate the present first hypothesis, and this is not only confined to linguistics. She showed her gamified graph and said that, for her, this technique of gamification could be clearer in different subject matters and is far from confusing. Therefore, she was happy to invite her classmates and share her challenging activity (Mechanic game element) that would certainly be helpful for them while revising their examinations, she claimed. Even though competition (Mechanic game element) may arise among students on their way of designing the graph, F.B. found graphs as both time- and effort-saving. As illustrated in Figure 6, F. B targeted the section of “Naturalists versus Conventionalists” which is part of the lecture on *Traditional Grammar*, and explained on what basis the two groups rely to describe the relationship between the word and the meaning. As shown, the gamifier used at least two colours, green and red, to distinguish between these two groups.

**Figure.6.** Gamification of Linguistics by Graphing

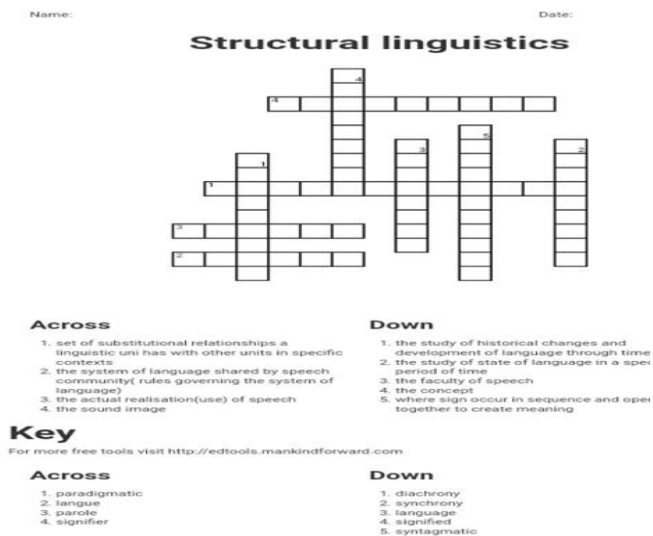


#### **4.5. Crossword Puzzle**

Other (two) female gamifiers selected a different competitive (Mechanic game element) tool to create an enjoyable atmosphere of learning linguistics through using challenging (Mechanic game element) puzzles. C.R.H and A.M perceived their way of gamifying the lectures as more efficient as it allows practicing technical vocabulary of the target language on the one hand, and synthesising the most important passages

from their given lecture handouts on the other. For them, the crossword puzzle is a helpful technique for strengthening students' relationships (Dynamic game element) while using their cognitive abilities and thinking critically to back up their linguistics understanding. One crossword puzzle provided by the present gamifiers is demonstrated in Figure 7. Here, the lecture on structural linguistics, as conceptualised by Ferdinand de Saussure (1916), is synthesised in the form of basic concepts such as, signifier, langue, parole, diachrony, and others.

**Figure.7.** Gamifying Linguistics through Crossword Puzzles



All in all, the participants did not try Internet-based gamification, a fact which makes me in agreement with Sarnou (2020) (see 2) stating that although our students are well involved in the digital world, they still do not know how to exploit the Internet for academic purposes. This might also be, as mentioned earlier, due to the limitation of Internet access in the classroom to a large extent. I also agree with the same author when claiming that their academic staff need to develop a more positive mindset towards the digital presence in education. This is a paramount step to promote a more advantageous use of Internet on the part of our students. However, I intend to disagree with Maddux (2002) (see 1.2) who describes educational technology Type 1 as being teacher-centred. On the contrary, the

results showed that the use of gamification of this type could be entirely student-centred.

## **5. My Proposal: Lom's Active Learning Strategies-Based Gamification**

In this paper, I chose Lom's (2012) Active Learning Strategies as a framework to implement student-centred gamification in linguistics at ENSO, Algeria, being a non-technological educational environment. One reason behind my choice was that I found this framework simple, clear and flexibly applicable into the present context. Lom (2012) described the traditional science lecture as the instructor's delivery of "... a carefully crafted monolog to a large audience of students who passively receive the information" (p. 64). It is still the most commonly used instructional mode in today's undergraduate education in spite of the many facilities offered by technology. To create more active learning within the traditional lectures, the author suggested a number of (non-technological) pedagogical strategies: reader's theatre, think-pair-share, roundtable, jigsaw, in-class quizzes, and minute papers. She added that the application of these can be relevant to courses in all fields.

According to Deterding et al. (2011. p, 11), gamification is not always digital: "Although the overwhelming majority of current examples of "gamification" are digital, the term should not be limited to digital technology". Gamification is presently implemented with regard to the learning styles. Broadly speaking, learners do not display the same abilities and skills and, therefore, they are said to have different styles. Seven learning style types (see Gardner, 1993; Mantle, 2001) can be identified to distinguish my learners. Typifying students according to their styles, however, does not exclusively imply that every single learner has one particular style. Learners may possess more than one style; yet, there is often one style, or more, that pre-dominate(s) in one learner. The identification of the seven styles will be gradually made below,

### **5.1. Reader's Theater and Handouts**

As for the Reader's Theater strategy, Lom (2012) said that the teacher asks his/ her students to read a text aloud in relation to the day's lecture. The text could be in different forms: a passage, statements, or a story. After

reading has been performed, discussions or a new topic introduction can take place. The current experimental study revealed that the traditional lecture is still favoured by a number of students: Their teacher's handouts help them considerably in organising and clarifying what they are learning. The reader's theater instructor can gamify the use of handouts by choosing a passage or some statements from this material to be read loudly in the classroom by one or more students. This strategy allows the linguistic learners to fulfill their preferences of reading, interacting, and taking notes, and serves aural learners to enhance their active and careful listening to details and stronger/weaker argument identification. Additionally, this strategy has benefits for solitary learners: Reading helps their voice to be heard in the classroom and gain safely more confidence in their knowledge.

## **5.2. Think-Pair-Share and Videos**

Think-Pair-Share learners go through different phases. Initially, the students are assigned, by their instructor, a question that they should think about individually and sort out their ideas during a given amount of time. Then, they gather into pairs to discuss their answers. Next, the teacher gives them the possibility to share their thoughts with the whole class. Some study participants suggested to use gamification, in the classroom, in the form of videos including some game elements (e.g. cooperation and competition). In this way, the teacher can show a student-designed video about the day's lecture to the class, and once they finish watching, s/he poses a question about it to all of them and ask them to think about independently. Later, s/he requests them to pair and share their thoughts. The instructor may intervene for guiding each pair in deciding about which answers are more relevant. Then, it is the time for every pair to share responses with other pairs in the classroom. Visual, aural and social learners take many advantages of this strategy as they can watch and listen to the video, before getting in touch with others to check their answers. Empathy, thoughtfulness and conflict-resolving are some of social learners' traits. This category of learners seems skilled at communicating and socialising through the think-pair-share strategy.

## **5.3. Roundtable and Graphs**



It is a total cooperative strategy (see 1.1) as students form small teams to work on a teacher's specific question that can have diverse responses. Every student has the chance to read the question written in a piece of paper passed quickly around every group to multiply answers. The groups may share subsequently their responses according to the teacher's instructions. This strategy converts the pure traditional lecture into a more flexible learning atmosphere where all the characters are involved. If the teacher opts for it, s/he can use, for example, a gamifying graph and ask students for its challenging interpretation. Of course, this strategy can engender multiple responses on the part of the students who collaborate and share at the level of their formed small groups. Students with a mathematical learning style may take the lion's share of roundtable graphs interpretation. This style-type learner likes to learn through problem-solving and classification which allow revealing relationships, whether causal or consequential. As part of gamification, extra credit points, badges or other small gifts can be attributed by the instructor to students who respond appropriately the most (see 1).

#### **5.4. Jigsaw and Visual Designs**

The instructor divides up the class into different teams. Every team is assigned, by him/ her, a specific distinct task and instructions that every student will follow to represent his/ her group subsequently. The teacher reorganises the teams to form "... new groups that are composed of one member from each of the original groups" (Lom, 2012, p. 67). For instance, each one of De Saussure's (1916) dichotomies is assigned to one group for explanation and clarification through avatars, drawings and images as alternative gamifying challenging activities to traditional lectures. After a while, the teacher rearranges new group with a member of the original one. Jigsaw technique necessitates that every member plays the role of a learner in the former group and a teacher who will describe one dichotomy in the new team, clarify it and answer questions. The instructor is there to help and guide the groups. Kinesthetic learners probably find this strategy suitable to their profile, as they are energetic and active. In this way, they can multiply and strengthen relationships with their classmates and with

their teacher, as moving around is more convenient for them than sitting down.

### **5.5. Short Quizzes and Crossword Puzzles**

The teacher poses a question that requires one single response, and requests all the students to find it out. This strategy emerges as a reaction to the traditional environment where only one or two students usually provide a quick correct answer to a question asked by the lecturer. The other students exclude themselves from the mission of responding and leave it to their same classmates every time. In quizzes, however, all students, whatever their styles, have equal chances to be pinpointed to provide an answer and give an overall idea to the teacher about the class's level of comprehension. Crossword puzzle (in addition to word search, word scramble and others) can be gamifying competitive quizzes tools for educational purposes. They gather single correct answers for each posed question. One remarkable advantage of such quizzes is that, even if their objective is primarily comprehension assessment, they contribute to foster the gamification underlying dynamics game element of relationships. Students do not feel at risk of making mistakes or participating. They are rather pushed to more challenge and engagement during the quiz experience.

### **5.6. Minute Papers**

The teacher can make use of Minute Papers after conducting any of the strategies of Reader's Theater, Think-Pair-Share, Roundtable, Jigsaw, or Short Quizzes, and any of the gamifying activities, such as handout passage reading, videos, graphs, drawings and images, or crossword puzzles as illustrated respectively. The teacher requests the learners to write a prompt answer to an overall question that covers the lecture of that day at the end of the session. Sample questions posed by the teacher are illustrated by Lom (2012, p. 69): "What was the most confusing concept?", "What was the take-home message?", "What will (or will not) stick in your brain from today's class?". Minute Papers strategy has several advantages. Such questions probably help all students to identify the challenging concepts of the day's lecture. The lecture is also assessed by the instructor through

students' feedback. S/he can catch up in the following session with further clarifications where necessary. This results in holding the teacher, who preoccupies for their learning process, in higher regard.

## **6. CONCLUSION**

In this qualitative research, I tried to explore the use of gamification in linguistics courses as it may take place in non-technological educational environments, illustratively Algeria. The present experimental case study results partially validated my first hypothesis since the participants used not only graphs to gamify linguistics lectures but also videos, drawings, images and crossword puzzles. As one main contribution of this study, and contrary to claims in the literature, the findings demonstrated that the use of gamification as educational technology Type 1 could be student-centred, rather than entirely teacher-centred, a fact which can serve non-digital educational settings, such as those in Algeria, and where the Internet connexion is only restricted.

I found it, on the other hand, useful to propose Lom (2012)'s framework on Active Learning Strategies as a way to implement relevantly this student-centred gamification in the present context. One limitation encountered was the sample size which did not allow generalising the present conclusions to include other Algerian higher educational institutions particularly and non-technological learning environments in general. Another limitation is that this research is only qualitative, and still needs a quantitative approach to back up or not the current data. A further investigation involving a larger sample and employing a mixed methodological choice will probably refine the findings, and shed more light on how pre-service teachers could be motivated and get more engaged in such settings being still insufficiently researched.

## **7. Bibliography**

### **1. Books:**

- De Saussure, F. (1916). *Cours de Linguistique Générale*. Edition Critique par Tulio de Mauro. 1983. Paris: Payot.
- Gardner, H. (1993). *Multiple Intelligences: The Theory in Practice*. New York: Basic Books.

## **2. Journal article :**

Deterding, S., Sicart, M., Nacke, L., O'Hara, K., & Dixon, D. (2011). Gamification. using game design elements in non-gaming contexts. In *Proceedings of CHI Extended Abstracts*, 9-15.

Fekih, M. (2018). The lack of technology in teaching EFL to learners with dyslexia in Algeria. In. *International Journal of Social Sciences and Education Research*. doi: 10.24289/ijsser.481520

Figuerola, J. F. (2015). Using Gamification to Enhance Second Language Learning. *Digital Education Review - Number 27*, June 2015. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1065005.pdf>

Gani. R, Devi. S, Goundar. S, Reddy. E. and Saber. F. (2019). Educational Technology: Relevance to a Fijian Classroom. In *IntechOpen*. doi: 10.5772/intechopen.88875.

Hegelheimer, V., & Fisher, D. (2006). Grammar, writing, and technology: A sample technology-supported approach to teaching grammar and improving writing for ESL learners. *CALICO Journal*, 23 (2), 257-279

Labeled, Z. (2020). Eudainomia, Self-transcending And Learners' Intrinsic Motivation. *Al-Kalim*. Volume 5, N° 2, Pages 438-450.

Lom, B. (2012). Classroom Activities: Simple Strategies to Incorporate Students-Centered Activities within Undergraduate Science Lectures. *The Journal of Undergraduate Neuroscience Education*, 11, A64-A71.

Sarnou, D. (2020). Questioning the Significance of Technologizing Algerian Schools and Universities: Did it Fail or Succeed?. In *International Journal on Integrating Technology in Education (IJITE)*. Vol.9, No.1. Retrieved from <https://aircconline.com/ijite/V9N1/9120ijite01.pdf>

Wagoner, B. (2015). Qualitative Experiments in Psychology: The Case of Frederic Bartlett's Methodology. *Art. 23, FQS16(3)*. Volume 16, No. 3.

Werbach, K and Hunter, D (2015). *The Gamification Toolkit: Dynamics, Mechanics, Components for the Win*. Wharton Digital Press: Philadelphia.

## **Internet Websites:**

Mantle, S. (2001). *The Seven Learning Styles*. Lesson Tutor, [www.lessontutor.com](http://www.lessontutor.com) visited 11/5/02.