

# Gamifying Language Testing through Web-Based Platforms

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**Abstract**—in this 21st century, technology has revolutionized almost all aspects of life, including language learning. However, the trend of testing has substantially remained unchanged. Since the ultimate goal of language testing is to judge and gather information about learners' proficiency, one might archetypically describe it as either having students sit at their tables with paper and pencils trying to answer a number of questions individually and in a very formal manner, or asking them to perform something like a presentation or role play in front of the examiner. Those kinds of tests tend to bring a nerve-racking atmosphere which might hinder students in demonstrating their actual competence. Relating to the issue, this study dwells upon the use of web-based platforms in the gamification of language testing. Gamification is the adoption of game elements for non-game purposes. By promoting gamified testing via web-based platforms, this research seeks to make language assessments more fun and motivating, and of course less terrifying for learners.

**Keywords**—gamification; language testing; language assessment; web-based learning

## I. INTRODUCTION

We have come to the 21<sup>st</sup> century, an era in which acquiring a second language has become a necessity. Although technology has revolutionized almost all aspects of life including language learning, the style of testing has remained relatively the same. Given that the primary goal of language testing is to measure learners' ability, many teachers might stereotype it as either having students answer a number of questions in a very formal way or asking them to perform something like a presentation or role play in front of the tester. Such conventional tests might actually pose a problem by creating a tense class atmosphere which can demotivate and even prevent students from showing their actual levels of proficiency.

As an English language teacher, I can remember clearly the faces of my students most of which became so anxious after I told them that they were going to have a "test" the following day. It well indicates that tests, especially the formal ones, have been thought of by the students as some sort of terrifying things. On the other hand, when they heard the word "game," I often saw happy looks on most of the students' faces. The question that lingered on my mind was: how can language testing be made as fun and motivating as games?

Educational trends have changed. The characters of today's students are relatively not the same with ours. They tend to have shorter attention spans than their teachers'. These young generations, the so-called digital natives, are living in a world full of online gaming, blogging, and social networking. They learn, process, and share information differently from the way we used to do. Everything is digital and web-based. They are so engaged with and surrounded by gadgets. All these changes have largely influenced the way instructors teach.

Many teachers, including English language instructors, have started to integrate technology, particularly web-based technology, into their teaching. Blended learning and game-based learning have become two most prominent buzzwords in education today in response to this technology hype. Not only has web-based technology modernized teaching and learning, it has also altered the way tests are administered. However, most online tests still have pretty much the same format as their predecessors, in which test takers merely answer questions popping up on screen. Such kind of format fails to include the fun factor like most games have. When it is not fun, it cannot be motivating.

According to [1], "across the globe, over 3 billion hours a week are devoted to gaming, and with the ubiquitous presence of mobile technologies, gaming is now also mobile." It means that games can keep their players captivated for hours without stopping. How can those games become so absorbing for many people? What does it take for teachers to engage students the way games engage their players? These questions have given rise to what is referred to as gamification. As stated by [7], the concept of gamification has been increasingly adopted in education, especially in the fields of teacher professional development and online learning. However, the field of testing, or to be precise language testing, has not been optimally gamified. Therefore, the objective of this study is to discuss the use of web-based platforms in the gamification of language testing.

## II. COMPUTER-ASSISTED LANGUAGE TESTING

Computerized language testing has long been around since the dawn of computer technology. As mentioned by [3], "large mainframe computers have been used since the 1960s for the analysis of test data and for the storage of items in databases,

or item banks, as well as for producing reports of test results for test users.” Nowadays, with the popularity of personal computers, word-processing software has become so commonly used to modify or even create tests.

One of the most salient features offered by computer and internet technology which has been brought to language testing is the ability to deliver various test tasks online, with immediate feedback, anywhere and anytime. Test of English as a Foreign Language (TOEFL), which is one of the largest and most prominent testing systems for measuring second language proficiency, is now administered in many countries via the internet through what is known as the internet-based test (iBT) program. This shows that the “exploration of technology for testing has increased to the point that today no matter where second language learners live, they will sooner or later take a computer-assisted language test” [3].

### III. WEB-BASED GAMIFICATION IN LANGUAGE LEARNING

As posited earlier, computer and the internet merely equal paper and pencil—they are only tools. Without a new format, online tests might still be nerve-racking and even demotivating. This is when gamification comes into play. Reference [12] states that gamification has turned out to be a popular term since the publication of Kapp’s book entitled “The Gamification of Learning and Instruction” in 2012. Reference [9] defines gamification as the use of game elements in a non-game context. In line with [8], the purpose of gamification is to use game thinking, aesthetics, and mechanics to engage and motivate people as well as promote learning and problem-solving.

Even though gamification in language learning is actually a new thing, it has much success in other disciplines and thus is showing good prospects to be implemented in the field of language education, and language testing in particular. Through gamification, language learners conceptualize themselves as game players who strive to complete a level as part of their learning. Thus, learners’ success in “completing a unit, module, or task and the language learning is assessed through a variety of game like experiences” [7].

By incorporating the techniques and elements of games into language learning and testing, it is expected that learners’ motivation and participation can be increased. More motivation and participation will in turn create a sense of empowerment and engagement as learners work through the learning process and accomplish the tasks. For that reason, teachers need to fully understand the basic concepts and principles of games in order to use gamification as a strategy for language learning [7].

There are several things that a language teacher needs to consider before gamifying their language teaching and testing. In [10], it is said that teachers’ duty is to balance three aspects: (1) learning objectives, (2) the game’s set of technological affordances, and (3) how both elements can support one another. In other words, the way we gamify learning and testing must well facilitate the classroom goals. Moreover, how game technology serves our instruction should also be based on “what is assessed (e.g., knowledge, skills, attitudes, beliefs), how it is assessed (e.g., formative, objective, formal,

informal), and the context in which it is assessed (i.e., individual, class, school, or system overall)” [10].

#### A. Elements of Gamification

Based on the works of [4] and [7], this paper suggests a number of potential game elements and mechanics which can be adapted for the purpose of gamifying educational instruction and testing. They are: points, levels, badges, avatars, leaderboards, performance graphs, progression, quests/challenges, social elements/community collaboration, discovery/exploration, rewards, achievements, and epic meaning. Each element can be elaborated as follows.

- **Points:**  
Points are the numerical marks or values that teachers can give to students based on the activities they have performed. In classroom contexts, points are also called grades.
- **Levels**  
Levels are parts or sections of games which usually contain different types of rewards. Students need to gain certain number of points in order to reach the next level.
- **Badges**  
Badges are visual representations which show that students have achieved a particular thing. The more achievements the students gain the more badges they will obtain.
- **Avatars**  
Avatars are icons or images that represent students in the games they are playing. In online games, avatars can usually be moved around the screen by the players.
- **Leaderboards**  
Leaderboards are scoreboards which show the rankings of game players based on their levels of success in accomplishing tasks.
- **Performance Graphs**  
Performance graphs are graphs that show players’ performance over the course of a play.
- **Progression**  
Progression is something that indicates how far along students are in the learning or testing process. It is usually shown through the use of progression charts or progress bars. In [4], it is said that progress display is “something that language teaching doesn’t always do well. Learners often don’t know where they are in their move toward language acquisition.”
- **Quests/Challenges**  
Quests/challenges are tasks which students have to fulfill in games or obstacles which they need to overcome either as a team or individually.

- Social Elements/Community Collaboration

Many kinds of games do include social elements which require players to socialize with other players throughout the games. Many also include community collaboration in which players work together as a team to do tasks or solve problems. In the classroom, this element is often referred to as group work.

- Discovery/Exploration

Another element that is often found in games is discovery or exploration. This element can well motivate people who like surprises and love discovery. In the game theory, those people are categorized as the “explorer” types.

- Rewards

Reward system is often used in games to motivate players to complete a task by giving them something as a mark of appreciation for their task completion.

- Achievements

According to [4], some learners belong to what the game theory refers to as the “achiever” or “killer” types. They are greatly motivated by the sense of achievement and want to be ahead of others, or even have more power than others. Games have been proven to be one of the best ways to channel this desire.

- Epic Meaning

There are also some learners who will get so motivated if they are to accomplish something big and very significant, like saving the world. In gamification, this element is called epic meaning.

## B. Benefits of (Web-Based) Gamification

Despite its being new in the fields of learning and testing, gamification is as mentioned in some studies, have shown promising results. As stated in [11], web-based games can promote interactive problem solving through constant interaction between players and the games they are playing, as well as captivate the players through the combination of storyline, sounds, and graphics which can thrill the senses.

According to [1], “game-based feedback tools like experience points, progress bars, badges, and achievements are motivating and meaningful to students.” Games usually offer more consistent feedback, both immediate and delayed, than does the traditional learning. Research conducted by Haskell (as reported in [1]) at the university level indicates that gamification and quest-based learning have had positive impact on students’ learning achievement. Those taking a quest-based course were reported to get higher grades compared to those who took a traditional course.

In playing games, learners are provided with the opportunity to compete against or work together with their peers. Reference [7] adds that besides it can constantly promote motivation, gamification is also able to increase students’ engagement in the learning process as well as sustain a nice relaxed atmosphere.

In connection with second language learning, [7] posits that gamification is an effective strategy for enhancing the learning of language skills, such as reading, writing and speaking. It is also said that gamification can motivate interaction and collaboration. “Through Gamification the educator is able to create meaningful experiences that will move away from just a game thinking mentality to a techno-constructivist mentality” [7].

## C. How to Monitor One’s Gamified Learning

Gamified learning can be assessed and monitored through many different ways. Artifacts—both digital and non-digital—including communication records, transcripts, presentations, and game logs, could be used as some alternatives to document students’ learning progress. Of course it is teachers’ duty to prepare rubrics which are relevant to the learning objectives of each class, so that those artifacts could be well evaluated and would not be off- topic. Besides, there have been several web-based gamification tools available online that provide their users with readily accessible reports or summaries of students’ performance. Some examples of web-based tools that can be used to gamify language learning and testing are listed together with their brief description in the next sub-section.

## D. Web-Based Games and Gamification Platforms for Language Learning and Testing

This sub-section elucidates two types of tools for gamifying language learning and testing, namely: web-based games (such as online mini games and MMOGs) and web-based gamification platforms.

### 1) Web-Based Games

#### a) Online Puzzles and Mini Games

Online puzzles and mini games can often be useful for facilitating students’ learning, outside or inside the classroom. Those kinds of games facilitate simple player-game interactions with immediate feedback. There has been an increasing number of online puzzles and mini games which are designed for ESL learning.

A lot of websites, such as [www.englishclub.com](http://www.englishclub.com) and [www.cambridgeenglish.org](http://www.cambridgeenglish.org), have made various puzzles and mini games available online for free. Some of the games are even provided with the information about the CEFR levels and the skills practiced.

#### b) MMOGs

Another kind of online games which has the potential to facilitate language learning is Massively Multiplayer Online Games (MMOG). This type of games is capable of simultaneously connecting large numbers of players around the world to communicate meaningfully as well as compete or cooperate with one another. Many young learners do love spending hours playing MMOGs. Some of the popular MMOGs are World of Warcraft, EverQuest, and Ultima Online. Since MMOGs provide players with a virtual environment, players are enabled

to chase certain shared goals and even construct knowledge socially through the target language.

Nowadays, MMOGs have become one of significant sources of interest for researchers and educational practitioners. These games promote meaningful communication among the participants by requiring them to build relationships, socialize and develop cultural artifacts which are essential to the play. In line with [10], MMOGs could even help learners develop twenty-first-century skills by means of knowledge construction and collaborative problem solving.

## 2) Web-Based Gamification Platforms

As gamification has been proven to be an effective strategy for enhancing learning process and motivating learners, there is a growing number of web-based gamification platforms which have now been made available for language teachers. As [7] puts it, those tools however, when being used in a gamified classroom setting, should not substitute the learning goals and objectives. They should in fact be selected and used by language teachers in accordance with their teaching approaches/strategies and students' learning objectives. Some examples of gamification tools which are frequently used in L2 learning are: Kahoot, Duolingo, Edmodo, Socrative, Class Dojo, Zondle, Brainscape, and Quizlet.

- Kahoot

Kahoot is a free gamification platform which helps teachers to create assessments in several formats, such as quizzes, jumble games, surveys, and discussions. To play games in Kahoot, students need to use their own devices (smartphones/laptops/computers) and internet connection. Kahoot can be played in either player-vs-player or team-vs-team mode. It incorporates several game elements, such as points, leaderboards, rewards, and achievements.

- Duolingo

Duolingo, as the name suggests, is a language learning and translation platform where learners progress through several levels. It works on both computers and smartphones. The areas of skills covered in Duolingo are listening, speaking, vocabulary and grammar. It provides immediate feedback for learners. They can always monitor their progress. Teachers can use Duolingo as daily homework since this platform motivates learner-driven work.

- Edmodo

Edmodo is a social networking platform which is designed for educational purposes. It combines gamification elements like quests and badges. With a similar interface to that of Facebook, Edmodo can be used as an extension of classroom learning. It motivates learners by promoting collaborative and team-work, and it also connects teachers to students'

parents. Edmodo can be accessed via any web browsers.

- Socrative

Quite similar to Kahoot, Socrative is a dynamic student response system which facilitates teachers to create formative and summative assessments to which learners will respond by using computers or smartphones. Gamification elements included in this platform are immediate feedback, live results, and instant data-analysis. With this platform, learners can answer questions in a more relaxed atmosphere with much lower level of anxiety.

- Class Dojo

Class Dojo is a web-based learning platform that deals with learners' behavior management and combines several game elements such as points, leaderboards, and avatars. It provides learners with immediate feedback and monitors their participation. It can even help classroom teachers to connect with and involve parents in monitoring their children's learning.

- Zondle

Zondle is another gamification platform with which teachers can create gamified quizzes. This platform can be used for both practice and homework. Game elements that Zondle has are leaderboards, avatars, progress monitoring and point-like system. Learners can access this platform through smartphones and web browsers.

- Brainscape

Brainscape is a learning tool which uses customizable flashcards to monitor learners' progress. Reference [7] names this method as confidence-based repetition. It is a good tool to facilitate vocabulary learning. It promotes critical thinking and provides learners with automatic feedback.

- Quizlet

Quizlet is an online learning tool that helps learners search or create their own study sets, and do some online practices with flashcards and games. It uses elements like progression charts, performance graphs, and points.

## IV. GAMIFYING LANGUAGE TESTING

As scrutinized in earlier sections, web-based gamification can become one of the promising solutions to traditional testing-related issues, such as high anxiety and low motivation. In line with [6], it is necessary that learners must be given plentiful opportunities to play with the target language without the feeling that they are being graded. When gamified, language testing seems to provide students with a more "at ease" yet stimulating atmosphere.



### A. Gamifying Formal and Informal Assessments

Based on their levels of formality, language assessments can be categorized into formal and informal assessments. Informal assessments, according to [6], “can take a number of forms, starting with incidental, unplanned comments and responses, along with coaching and other impromptu feedback to the student.” This type of assessments evaluates students’ learning behavior without using standardized instruments. Informal assessments can be carried out by teachers through the use of portfolios, observations, or checklists documenting students’ gamified learning inside or outside the classroom.

Formal assessments on the other hand “are exercises or procedures specifically designed to tap into a storehouse of skills and knowledge” which are systematic, planned, and constructed “to give teacher and student an appraisal of student achievement” [6]. Teachers might adopt or design the testing instruments for this type of assessments using web-based gamification platforms or web-based games mentioned earlier. However, careful selection of the platforms is needed in order to match the learning objectives and condition of the class with the appropriate gamification tools. Many of those platforms can automatically generate students’ test results which can be readily accessed by the teachers.

### B. Gamifying Formative and Summative Assessments

With regards to the purposes of the assessments, language testing can be divided into two groups: formative and summative assessments. Formative testing gives feedback directly to learners with the aim of providing them with the information needed for improvement [5]. Within the gamification framework, formative assessments can be either formally administered by teachers, in which they give feedback on learners’ language proficiency indicated during the play, or embedded within games which support automatic feedback for learners.

Quite different from that of formative assessments, the goal of summative assessments, which are typically administered at the end of a unit or course, is to summarize what learners have acquired and how well they have accomplished the objectives [6]. Therefore teachers need to make sure that the web-based tools they use to gamify the testing are relevant to learning objectives and able to include materials being taught throughout the course/unit. In both formative and summative assessments, the use of rubrics can also play a pivotal role in ensuring the relevancy between gamified testing and learning objectives.

### V. CONCLUSION

With the growing prominence of various web-based games and gamification platforms, it is easier for teachers to change the stereotypical nature of language testing, which is nerve-racking and demotivating, into a more fun and stimulating one. Nonetheless, there are few questions that one needs to deliberate before selecting the tools and incorporating them into language assessments, especially those regarding what to assess, how to assess, and under what condition [10]. As a matter of fact, the success of language testing gamification really depends on whether the games are well aligned with learning objectives and whether those objectives are properly assessed with the right criteria [7]. Therefore web-based gamification can be a very effective way of transforming language testing into a more engaging one only if teachers know how to make the games relevant to the intended objectives of the class.

### References

- [1] B. Perry, Gamifying French language learning; a case study examining a quest-based, augmented reality mobile learning-tool. In *Procedia – Social and Behavioral Sciences* vol. 174, pp.2308-2315, 2015.
- [2] B.R. Belland, “The role of construct definition in the creation of formative assessments in game-based learning” in *Assessment in game-based learning*, D. Ifenthaler, D. Eseryel, and X. Ge, Eds. New York: Springer, 2012, pp. 29-42.
- [3] C.A. Chapelle and D. Douglas, *Assessing language through computer technology*. Cambridge: Cambridge University Press, 2006.
- [4] D. Healey. *Gamification: Communicating with digital natives*.
- [5] G.C. Delacruz, “Games as formative assessment environments: Examining the impact of explanations of scoring and incentives on math learning, game performance, and help seeking,” doctoral dissertation. Los Angeles: University of California.
- [6] H.D. Brown, *Language assessment: Principles and classroom practices*. Longman.
- [7] J.F.F. Flores, “Using gamification to enhance second language learning” in *Digital Education Review* no. 27, pp. 32-54, June 2015.
- [8] K.M. Kapp, *The gamification of learning and instruction: Game-based methods and strategies for training and education*. San Francisco, CA: Pfeiffer, 2012.
- [9] K. Werbach and D. Hunter. *For the win: How game thinking can revolutionize your business*. Philadelphia, PA: Wharton Digital Press, 2012.
- [10] P.G. Schrader and M. McCreery, “Are all games the same?” in *Assessment in game-based learning*, D. Ifenthaler, D. Eseryel, and X. Ge, Eds. New York: Springer, pp. 11-28, 2002.
- [11] V.J. Shute and F. Ke, “Games, learning, and assessment,” in *Assessment in game-based learning*, D. Ifenthaler, D. Eseryel, and X. Ge, Eds. New York: Springer, 2012, pp. 43-58.
- [12] Y.S. Chee, *Games-to-teach or games-to-learn*. Singapore: Springer, 2016.