Gamification in L2 teaching and learning:
Linguistic risk-taking at play

Farhad Roodi
University of Ottawa

Nikolay Slavkov
University of Ottawa

Abstract

Gamification is increasingly popular in second language acquisition research and has been correlated with higher motivation and engagement. The use of gameplay elements in non-game environments has been shown to be beneficial; however, research on gamification and taking linguistic risks is scant. A linguistic risk is an authentic communicative act that learners take in their second language and that can be considered "risky" due to factors such as making mistakes, etc. In this article, a Linguistic Risk-Taking Initiative (LRTI) implemented at the bilingual campus of the University of Ottawa was analyzed based on a game-informed framework. An analytical tool drawing on existing research in the field was developed to evaluate the initiative. Based on the analysis, the LRTI passport booklet and digital app, which are central to the initiative, were found mostly aligned with gamification parameters but further improvements of the design of the initiative are needed.

Key words: gamification, linguistic risk-taking, second language learning, task-based language teaching

Résumé

La ludification est de plus en plus populaire dans la recherche sur l'acquisition de langue seconde et a été également corrélée avec une motivation et un engagement plus élevé. L'utilisation d'éléments de jeu dans des environnements non ludiques s'est avérée bénéfique ; cependant, les recherches sur la ludification et la prise de risques linguistiques sont peu nombreuses. Un risque linguistique est un acte de communication authentique dans la langue seconde des apprenants qui est susceptible de présenter un défi en raison des facteurs liés notamment à la possibilité de faire des erreurs, etc. Dans cet article, une initiative de prise de risque linguistique (IPRL) mise en œuvre sur le campus bilingue de l'Université d'Ottawa a été analysée sur la base d'un cadre fondé sur le concept de ludification. Un outil d'analyse inspiré des recherches actuelles dans

ce domaine a été développé pour évaluer l'initiative. Selon l'analyse, le passeport et l'application mobile de l'IPRL, qui sont au cœur de l'initiative, ont été jugés conformes aux paramètres de la ludification en principe, mais des améliorations supplémentaires de la conception de l'initiative sont nécessaires.

Mots-clés : ludification, prise de risque linguistique, apprentissage d'une langue seconde, enseignement des langues basé sur les tâches

Introduction

Research on the use of gameplay elements in non-game environments has shown that gameplay elements can be beneficial for language learners (Figueroa Flores, 2015). The incremental availability of language learning apps, websites, and online tools has delineated gamification, among others, as a new educational affordance (Reinhardt & Sykes, 2014). Some studies have proven the advantages of integrating game elements into second and foreign language teaching and learning (L2TL) (Figueroa Flores, 2015; Kapp, 2012; Reinhardt & Sykes, 2012). Overall, gamification elements have been shown to help address low motivation, high anxiety, negative attitude, low self-confidence, and other debilitative psychological variables that intervene in the process of learning and using a second language (L2)[1] (Reinders & Wattana, 2012).

Inspired by such work, the focus of this article is to investigate the extent and effectiveness of integrating game elements in a *Linguistic Risk-Taking Initiative* (LRTI) implemented at the officially bilingual campus of the University of Ottawa. The LRTI draws on an array of factors influencing bilingualism and second language acquisition, such as language anxiety, motivation, and willingness to communicate. The LRTI also considers pedagogical concepts such as learner autonomy, task authenticity, content-based and task-based learning, and gamification. The goal of the article is not to draw on particular data from the LRTI, which have been reported elsewhere (e.g., Slavkov, 2020; Rhéaume et al., 2021). Instead, we position this article as an exploratory conceptual-analytical work aimed at developing a tool based on the definition of gamification provided by Kapp (2012), Koster (2005), and Deterding et al. (2011) in order to evaluate the LRTI from a gamification perspective and offer directions for future development. The tool developed in this study uses, for the first time, the defining elements of game and gamification for such analysis. To our knowledge, no previous

---

[1] Second language, or L2, in this article means the second official language (French or English), acknowledging that, in reality, this may be a third, fourth, and so on, language in a learner's repertoire.

rubric or framework has been identified in the literature that directly addresses evaluation of gamification. As such, this article represents an initial step in this direction.

The Linguistic Risk-Taking Initiative

The LRTI was conceived with the aim of encouraging English and French language learners to use their L2 outside the classroom (Griffiths & Slavkov, 2021; Séror & Slavkov, 2019; Slavkov & Séror, 2019), as a supplement to formal classroom learning. A linguistic risk is an authentic communicative act that learners take in their L2 and that can be considered 'risky' due to factors such as fear of making mistakes, being judged, and so on; yet, taking linguistic risks also offers opportunities for having fun, gaining a feeling of accomplishment by overcoming challenges, and ultimately acquiring new knowledge or solidifying knowledge acquired previously in the classroom (Slavkov, 2020). Choices we make throughout life can involve some level of risk (e.g., buying a house, getting married, trying new food, making friends, etc.). The level of risk can increase when, in these situations, an L2 is the medium of interaction because of "the lack of certainty and the prospect of loss or failure" (Kogan & Wallach, 1967, p. 113). One could assume that the greater the risk, the less willing learners to interact and socialize in their L2 would be. Drawing on principles of task-based language teaching, action-oriented approaches, and gamification, the LRTI therefore raises awareness about the importance of conscious and targeted linguistic risk-taking in real-life situations.

At the heart of the LRTI is a Linguistic Risk-Taking Passport and, more recently, a mobile app for English and French language learners at the University of Ottawa. The passport is designed to resemble a real passport and its pages contain a list of authentic situations, called risks, which can be taken by learners outside the classroom (e.g., approach a passer-by for directions in your L2, check out a book from the university library using your L2, order a meal at the cafeteria, submit an assignment, email a professor, attend a social event, etc.). Learners are guided and encouraged to take a selection of such risks, as appropriate for their proficiency level and personal interests, and check them off in their passports (for more details on the passport, see Slavkov 2020; Slavkov & Séror, 2019).

The first two pages of the passport feature a welcome message and a personal details page. The passport was initially developed in 2017 and contained 61 risks but has evolved over several successive cycles and currently contains more than 80 risks. Each time participants take a risk, they are expected to mark that risk as High (H), Medium (M), or Low (L) (depending on how they felt about that particular situation at the time). Most risks can be

repeated up to three times, and learners have the option of adding comments to each risk in the passport. Users can also write suggestions in a 'propose your own risk' section, for risks not already included in the passport. The program runs on a university semester basis and learners who have completed a certain number of risks by the end of the semester can submit their passports in a draw for prizes. The program does not replace classroom language teaching at the university but rather supplements it and bridges classroom learning to real-life usage outside the classroom (Griffiths & Slavkov, 2021).

As a logical sequel to the paper-based passport, the LRTI recently developed a mobile app. The app addresses some of the paper passport shortcomings: as indicated by Griffiths (2019), some participants lose their passports or forget to carry them around, while the likelihood of having their phones with them at all times is much higher. The LRTI mobile app also offers additional features. For instance, users can search for specific risks, or apply filters to choose risks from a skill-based category (Oral Interaction, Listening, Reading, Writing) or theme-based category (Leisure, On Campus, Academic, Daily Life, Technology). Users receive digital stamps after marking a risk as completed. They also progress through levels associated with the total number of risks taken in the app and a trophy with a different colour appears (from green to silver, gold, and platinum, etc.) as users incrementally add completed risks. Pop-up messages encourage further activity in the app, e.g., "Good job! Keep taking more risks", "Take 5 more risks to reach the gold level!" Another feature of the app is the availability of user statistics for the number of risks taken in weekly or monthly intervals. Although a full version of the app has been developed and piloted with learners, it has not been fully launched yet.[2]

Games and gamification

Since the advent of digital games in the 1970s, scholars and educators have examined the potential of using games more directly as learning tools (e.g., Cook, 1997). However, the idea of using games in learning dates back to Plato: "do not keep children to their studies by compulsion but by play" (ca. 370 B.C.E./1943, p. 537a). Although no single definition of gamification has received universal consensus in the literature, a common definition comes from Deterding et al. (2011) as the use of game-design elements in non-game contexts. In order to define gamification meticulously for the purpose of this study, it is important to examine the root *game* and define it. Koster (2005) states that a game is a system in which "players are engaged in an abstract challenge, defined by rules, interactivity, and feedback, that results in

---

[2]The beginning of the Covid-19 pandemic affected the launch of the app with a larger pool of learners.

a quantifiable outcome often eliciting an emotional reaction" (p. 34). Taking these elements into account, the key factors of a "gameful" activity or a game can be noted as *system*, *player*, *abstractness*, *challenge*, *rules*, *interactivity*, *feedback*, *quantifiable outcome*, and *emotional reaction*. These game elements were meticulously examined in work by Koster (2005), Deterding et al. (2011), and Kapp (2012) and were used in our methodological approach to evaluate the LRTI (see the section "Study design"). Moving on to the idea of gamification, Kapp (2012) defines gamification as "using game-based mechanics, aesthetics, and game thinking to engage people, motivate action, promote learning, and solve problems" (p. 10). The elements in this definition have also been applied to the analysis of gamification in the LRTI passport and app.

Game categories

A common notion in classifying games is their intended purpose and audience. Thus, educational games can be contrasted with entertainment-based games or those with a primary purpose of advertising or political campaigning (Reinhardt & Sykes, 2014). In the context of this study, the focus of analysis is on educational games using game elements for the purpose of L2TL.

The framework introduced by Reinhardt and Sykes (2014) distinguishes the level and the type of integrating games into a learning process using three categories: *Game-enhanced*, *Game-based*, and *Game-informed*:

Game-enhanced learning involves the use of vernacular games. Vernacular games are commercially made games that are not purposefully designed for learning or teaching.

Game-based learning is described as the implementation of games that are intentionally designed for L2TL (Reinhardt and Sykes, 2014). Unfortunately, the educational technology industry has not invested significantly in developing games, apps, or software, nor has it conducted a great deal of research to investigate the effectiveness of such games (Reinhardt, 2019).

Game-informed learning is the application of game theories and elements in L2 learning environment that does not rely on the use of digital games or technology solely (Reinhardt, 2019). Game-informed learning incorporates game principles and goal-oriented game tasks into L2 learning tasks in order to gamify the learning experience. This is also known as gamification (Kapp, 2012; Reinhardt, 2019).

Study design

The first author of this article developed an analytical tool with the objective of examining the LRTI's passport booklet and mobile app (described in the section "Analysis and discussion") from the perspective of gamification. In essence, the tool represents a synthesis of the literature summarized in the same section and lists factors that are pivotal to gamified learning. It draws specifically on the work of Kapp (2012), Koster (2005), and Deterding et al. (2011) in extracting relevant elements of the definitions of game and gamification and inserting them into a rubric or an analytical checklist presented in Table 1. We loosely relate this tool in its purpose and design principles to the work of Rosell-Aguilar (2016) and Anstey & Watson (2018) though that work focuses more generally on the evaluation of digital tools and not specifically on gamification. As such, we see our tool in Table 1 as an initial contribution to systematic evaluation of gamification, which may, of course, undergo significant additional development and evolution in future work. The two research questions (RQ) formulated for this exploratory study were the following:

RQ1: To what extent are game elements, as defined in this study, present in the LRTI paper passport and digital app?

RQ2: To what extent are gamification elements, as defined in this study, present in the LRTI paper passport and digital app?

To answer the research questions, the analytical tool presented in Table 1 was applied as a framework of analysis to the LRTI passport and mobile app. Evaluating the LRTI passport and mobile app against the categories in this tool allows a systematic review of relevant features and affordances of gamification. A more detailed discussion of each element in the table is presented further in this article. Developing this analytical tool represents a novel contribution to the gamification literature since other evaluation frameworks mostly focus on video games or digital apps but not specifically on gamification, as already indicated. To our knowledge, this exploratory study is the first one to use the defining elements of game and gamification from the literature to actually analyze how gamified an L2 learning activity is. As indicated in Table 1, game elements are placed before gamification elements in the table as game elements are the precursor to making an activity gamified.

Applying the analytical tool to the LRTI was a reflective, recursive, and introspective process. During this process, two researchers independently juxtaposed each element in the tool with the features and affordances of the LRTI and then discussed them until reaching consensus over each item. Both researchers have in-depth experience with and insider knowledge of the LRTI at

Table 1

Analytical tool for evaluating gamification
(adapted from definitions by Kapp [2012] and Koster [2005])

	Factor	Description
Game elements	System	A set of interconnected rules leading learners' actions
	Abstractness	The extent of similarity to real world actions
	Challenge	The level of difficulty in completing tasks in a game
	Rules	Sequential steps that learners follow and the limits in a game
	Interactivity	The interaction among learners and with the game content
	Feedback	Positive or negative responses of the system to learners' actions
	Quantifiable outcome	The winning state; accomplishing tasks in a game
	Emotional reaction	Feelings of learners in and from a game
Gamification elements	Mechanics	Clear rules, levels, reward system, and procedures in a game
	Aesthetics	Presence of graphic and visual design in a game
	Game thinking	Presence of competitiveness or cooperation in a game
	Engagement	Presence of elements arousing and keeping learners' interest in a game
	Motivating action	Giving direction, purpose, and meaning to actions in a game
	Promoting learning	Providing chances for practice to enhance learning
	Solving problems	Opportunities for solving a problem or fulfilling a task in a game

the University of Ottawa; the second author is also the main creator of the LRTI.

Analysis and discussion

Game elements analysis

System, rules, and quantifiable outcome

According to Kapp (2012), having the system element is the most important factor in calling a learning task game-like. The rules of LRTI were explained to the learners when the passports were distributed among them by their teachers or by graduate student presenters who were members of the LRTI team. Additionally, the mission, purpose, and rules of commencing the LRTI

are presented in the beginning pages of the passport (see Figure 1).

In the case of the app, similarly, the rules and system of the game are explained in the sidebar menu (Figure 2) and in class.[3]
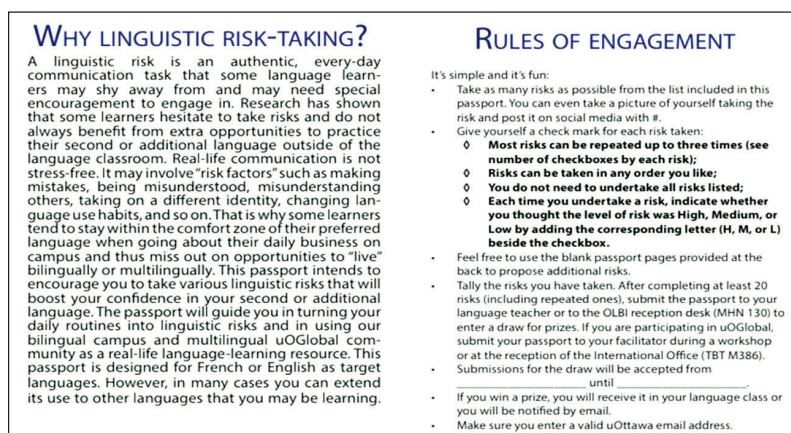

Figure 1

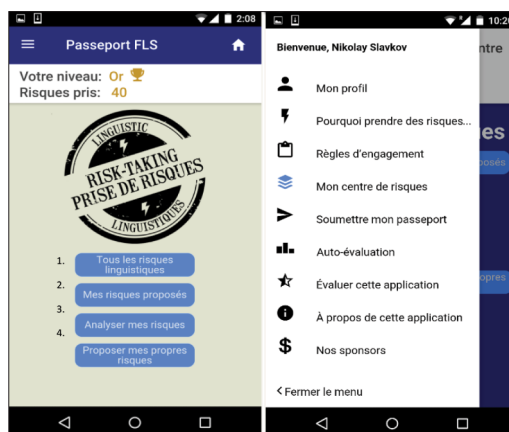*Introductory pages of the LRTI passport*

Figure 2

The menu of the LRTI mobile app

The users of the app can also submit the risks they have taken to try their chances of winning a prize. The type and number of risks in the app match the

---

[3] Although a screenshot of the rules of engagement in the app is not included, they are equivalent to the rules in the paper passport displayed in Figure 1.

passport booklet. There are no discrepancies between the paper passport and the app in terms of overall system, rules or quantifiable outcome. Therefore, these three elements are incorporated into both the LRTI passport and app (that the app, however, has some enhanced features that the passport does not have).

In general, the system, rules, and outcome of the initiative were designed on the basis of a mixture of pedagogical, practical, and gamification desiderata that sometimes interacted or even competed with one another. For example, learners are required to complete a minimum of 20 risks over the course of the semester in order to qualify for entering the prize draw at the end. This number was not scientifically or pedagogically determined but was viewed as a feasible practical goal of not too many and not too few risks in the busy lives of our students over the course of one semester. From a gamification point of view, this number can be also viewed as an achievable winning state for every participant; nonetheless, students are also encouraged to take as many risks as possible, based on our pedagogical perspective of increasing the number of authentic domains in which learners engage as well as increasing the frequency of authentic language use outside the classroom. Thus, students were not limited to stop at 20 risks and our data indicate that many of them chose to take a higher number of risks. As reported in Slavkov (2020), based on a pool of participants from the first several iterations of the initiative, 65% of the learners took more than 30 risks. Furthermore, learners are free and encouraged to continue using the passport and the app beyond the end of the semester; this was based on pedagogical considerations related to the promotion of life-long learning.

As another example of the type of consideration that was applied to the system, ordering of risks and levels, or having to take a certain number of risks to unlock the next level of risks, was viewed as attractive from a gamification point of view. However, pedagogically we believed that this would not necessarily fit individual learner profiles; due to the complex linguistic and socio-psychological aspects that play into the notion of risk, a certain item in the passport may be challenging for some learners but easy for others (even if they are formally considered to be at the same level of proficiency and taking the same language class). Therefore, we chose not to categorize risks in the passport booklet and app by level (a categorization that would have also required a very challenging and potentially unreliable validation process from a practical perspective). However, keeping gamification in mind, we incorporated trophies and levels into the digital app based on the number of risks taken to encourage learners to go beyond the basic outcome of 20 risks.

Finally, we let learners choose their own risks, which suited our pedagogical, gamification, and practical objectives, taken as a whole. From a gamification point of view, we did not want to force a prescribed set of risks

onto users because some risks may be less interesting and relevant than others to a given individual. From a practical point of view, this was a simple and straightforward choice that came at no additional cost and, from a pedagogical perspective, this was driven by the concept of autonomy in language learning, where learners are free to set their own pathways at least to a certain degree.

Abstractness

On the one hand, the LRTI focuses on real actions in real life. On the other hand, learners recording the risks they have taken and marking down their level as high, medium or low in a booklet or in a phone app, involves a level of abstractness. Thus, both the passport and app have the same relatively low level of abstractness.

Challenge

The LRTI lists the activities that individuals undertake repeatedly in their lives such as writing an email, talking to a stranger or a friend, listening to music, watching a movie, etc. As these activities occur frequently in real life, they may not seem challenging. However, the challenge is present because of the language of the communication associated with these tasks. While assuming that participants typically use their preferred language in their daily interactions, the LRTI asks them to use their L2, the language in which they feel less comfortable or competent (i.e., not their preferred official language). Overcoming the fear of making mistakes, being judged by others, or appearing as not completely competent while using an L2 is a significant challenge that makes the LRTI engaging — which is similar to a game.

Interactivity

This element refers to communication with the game content and with other learners. The users of the passport can contribute to the content of the passport by adding comments to each risk and by proposing new ones. It has been reported that teachers have encouraged the use of the passport in the classroom by having learners talk about their experiences. Learners have also been paired as *risk buddies* to take linguistic risks outside the classroom (Griffiths, 2019). As a result, interaction with the game content and with other learners is available for the users of the passport.

The app, on the other hand, does not currently have an option for interaction among users, although interaction with the content happens similarly to the passport. The app can be used individually without sharing one's experiences with other users within the tool itself, but there exists the potential to connect users via the internet (e.g., social media, etc.). Both the

app and the passport encourage interaction with other users in a similar way in the classroom, but the app per se is not yet equipped with the technology that allows interaction among users.

Feedback

The mobile version of the LRTI provides more feedback to users than the passport.[4] After taking each risk, a stamp confirming completion of an attempt and a positive pop-up message encouraging further actions are shown to the users. This form of feedback adds to the interactivity of the app in terms of interaction with game content.

The feedback to the users of the passport, on the other hand, can be provided only in the classroom by teachers and peers. The feedback in the app can be called immediate while delayed feedback is provided to the users of the passport booklet. As a result, the feedback system in the app is more aligned with the definition of game than the paper passport because the app provides the feedback to the learners continuously and consistently; conversely, providing feedback in the passport can be occasional and does not necessarily happen after completing each risk.

Emotional reaction

Finally, learners can experience the feeling of victory when they complete 20 risks and when they enter a draw to win a prize (i.e., the satisfaction of unlocking the opportunity to enter a competition for a prize and potentially additional satisfaction if one does win a prize); even taking a single risk in the app or passport could bring satisfaction (i.e., the novelty of the experience of engaging authentically in the LRTI). Some negative emotional reactions, such as embarrassment or failure, are also possible when learners take risks or when they interact with each other about their personal experiences of taking risks. However, previous data indicate that such incidents are rare (Griffiths, 2019) and in any case feelings of disappointment and even frustration can also be part of playing various other games (both digital and non-digital). As such, both the app and the paper booklet seem to have a similar level of potential emotional reaction. A summary of the game elements analysis is presented in Table 2.

---

[4]Feedback here does not mean language feedback by classmates or teachers but the feedback from the system or algorithm of the app.

Table 2

Summary of game elements analysis

	Factor	Passport	App
Game elements	System and rules	Explained in class and available in the beginning pages of the booklet	Explained in class and available on sidebar menu
	Abstractness	Relatively low level of abstractness	Relatively low level of abstractness
	Challenge	Challenging enough to be engaging	Challenging enough to be engaging
	Interactivity	With content: yes With other users: discussion of risk-taking in classroom if teacher plans it; taking risks with a buddy outside of the classroom, if the teacher encourages this	With content: yes With other users: not developed in the app, but present in the same way as in the passport
	Feedback	Delayed and in classroom	Immediate and available in the app
	Quantifiable outcome	Taking 20 risks and chances of winning a prize	Taking 20 risks and chances of winning a prize
	Emotional reaction	A range of different emotions can be evoked	A range of different emotions can be evoked

Gamification elements analysis

As indicated earlier, the presence of game elements is a prerequisite for gamification. We now proceed to the gamification elements analysis based on the respective categories included in the analytical tool (see Table 1).

Mechanics

This aspect includes a system plus the reward mechanism and level description. As described earlier, both the passport and app have the system, rules of engagement, and procedure of participation. However, the reward mechanism is not fully developed in the passport. Although a few of the learners who submit their passports receive a prize, there are no immediate and constant reward mechanisms for the actions of the learners.

The LRTI app, similarly, lacks a highly developed reward system, but nonetheless it shows the level of a user based on the number of risks taken; as the level increases, the colour of the trophy (representing level of achievement) changes through several different colours ultimately reaching silver, gold, and

platinum. As a result, the app has a higher level of gamification in terms of mechanics than the passport.

Aesthetics

The app employs more colours and designs to present a more appealing interface. Different pages and options available in the app create the potential to use more aesthetic elements. The design of the passport resembles a real passport which can appeal to the users; however, compared to the app, the passport utilizes fewer aesthetic elements.[5]

Game thinking

This element brings a sense of competitiveness or cooperation to a game. Competition is the most frequent feature in games that drives players' actions and encourages them to continue playing (Reinhardt, 2019). There is no built-in competition in the passport and app. Cooperation, on the other hand, has been implemented in some of the cases of using the passports when pairs or groups of learners designated as 'risk buddies' took linguistic risks together. As a result, game thinking is present more in the form of cooperation rather than competition in the LRTI. Therefore, it can be argued that the passport and app are not fully gamified in this sense as competition or cooperation are not envisaged in the current LRTI system, and it is only the teacher who may promote game thinking in the classroom.[6]

Engagement

The LRTI capitalizes on the opportunities available at the university and in the city of Ottawa to use English or French. Students have chances to use either language abundantly on the officially bilingual campus and elsewhere, due to the somewhat bilingual character of the city of Ottawa. However, it has been noted that learners naturally tend to fall back on their dominant or preferred language when interacting with others. Helping learners discover new ways of using their L2 in daily life can make the LRTI passport and app engaging. The LRTI acknowledges the presence of risk in using L2 and encourages learners to seek such situations; taking risks is positioned as a positive, exciting, and even thrill-seeking activity. Both the passport and app are similar in terms of

---

[5]This is a personal opinion of the first author. Aesthetics are highly subjective in nature and some may like the look and feel of the passport booklet more than the app; the booklet also has a stronger resemblance to a real passport, which some users may appreciate more.

[6]Adding the features of competition or cooperation in the app includes more complex coding, but it is planned for future developments.

engaging learners, although the app may be somewhat more engaging as it awards stamps and offers different levels and trophies based on the number of risks taken.

Motivating action and promoting learning

This element involves giving direction, purpose and meaning to learners' actions in the game. The list of linguistic risks provided in the app and passport booklet directs the actions of learners in the LRTI toward interactions in the L2. Completion of the passport and winning a prize gives them a purpose besides motivating them. In addition, raising awareness about the embedded risk levels in learners' daily interactions makes taking linguistic risks meaningful in the sense that they become meta-cognitively aware when they position themselves in risk situations as described in the passport or app. This awareness helps learners to be conscious of the situation and the meaning they produce via L2, which is in line with the noticing (Schmidt, 1990) and output (Swain, 1985) hypotheses. Learning can happen while taking a linguistic risk as a result of such awareness. Although chances of promoting learning explicitly are not present in the app and passport per se, self-reflection and in-classroom reflection on linguistic risk-taking experiences can promote learning.

Solving a problem

Finally, learners solve problems when they are faced with real-life tasks in their L2. Ordering a coffee at the cafeteria or asking a passerby for directions may be a trivial experience in one's first language but it involves linguistic, social, and cultural problem-solving as soon as the task is performed in the L2. To sum up, both the LRTI app and passport booklet, are gamified in the sense that participants complete real-life tasks in interacting with others in the target language. A summary of the gamification elements analysis is presented in Table 3.

To summarize the analysis addressing RQ1 and RQ2, all game elements are present in the LRTI passport and mobile app and a modest degree of gamification is present. For most items in the analytical tool, these generally apply equally to both the booklet and the app.

Discussion: The LRTI passport booklet

According to the classification of games in L2TL (Reinhardt, 2019), the LRTI passport booklet can be classified under the game-informed category as technology and digital games are not a prerequisite for making a learning task or environment gamified. The LRTI incorporates almost all game elements into the passport. According to Table 2, only two elements of interactivity and

Table 3

Summary of gamification analysis

	Factor	Passport	App
Game elements	Mechanics	No immediate and constant reward mechanisms available	Limited rewards system exists; only in the form of stamps and level trophies
	Aesthetics	Observable in the design of the passport; similarity to a real passport	More appealing digital interface than the paper passport
	Game thinking	Not developed; can be planned only by teacher in classroom	Not developed; can be planned by teacher in classroom
	Engagement	Engaging enough	Possibly more engaging due to levels, trophies, and stamps
	Motivating action	Gives direction, purpose, and meaning to learners' actions	Gives direction, purpose, and meaning to learners' actions
	Promoting learning	Can happen via reflection on LRTI experiences yet not developed in the passport	Can happen via reflection on LRTI experiences yet not developed in the app
	Solving problems	Solving the problem of overcoming the risk of interacting in L2; problem-solving in regular authentic daily life tasks	Solving the problem of overcoming the risk of interacting in L2; problem-solving in regular authentic daily life tasks

feedback do not fully comply with the game definition. Interaction with game content is present in the form of proposing additional risks and commenting on each risk. However, learners can interact only in the classroom if a teacher plans to do so during class hours. Moreover, interaction among learners is minimal in the passport. It can be argued that instant and constant interaction among learners is not feasible via the passport because of its paper-based nature. Taking game-informed learning characteristics into account plus the paper-based type of the game, a delayed form of interactivity in the form of sharing stories and experiences of taking a linguistic risk can align with the definition of gamification.

When it comes to feedback, the paper-based passport does not provide feedback to learners because, as opposed to digital and smart devices, providing instant feedback is inconceivable through a paper-based tool. However, marking down the level of a risk could be viewed as a particular form

of self-feedback that learners give themselves, based on their own perceived feeling of the risk at a given time. This type of self-feedback increases the level of self-awareness in language use, linguistic limitations, and socialization factors involved in an interaction.

Another element that is partially present in the passport is a reward mechanism. There are no immediate and constant reward options available but the cumulative actions of learners in taking risks lead to qualifying for a prize draw (i.e., after taking a minimum of 20 risks); the reward is not present with every risk taken, nor is it guaranteed when learners qualify to enter the draw. Earning and losing points or stars and keeping scores are popular forms of rewarding learners' actions in a game (Reinders, 2017) which are not incorporated in the passport. An argument, similar to the one made earlier for interactivity and feedback, can also be presented here to claim that the reward system is potentially present in a different way. It is a delayed form of reward either in the form of encouragement from a teacher or comments from classmates, besides the prize that some leaners can win after submitting the passport. Yet it seems difficult to qualify such types of reward mechanisms as truly gamified.

One major missing gamification element in the passport is game thinking, which is the inclusion of competition, cooperation, exploration, or story telling in the game. The system and rules of the passport do not develop any of the mentioned features. Game thinking can exist only if a teacher plans to incorporate some of the above features into using the passport and participating in the LRTI. Furthermore, the rules of the LRTI do not engage learners fully in the system of the game. For example, marking a risk as high, medium, or low does not affect the system or how users engage with the rules of the game. In other words, user-generated evaluations of risks are not integrated into the game itself, even though they serve a useful research purpose in providing data about learners' dispositions towards the various risks (see Griffiths & Slavkov, 2021, for more details on how the LRTI is used as a source of research data and cyclical continuous improvement). A more sophisticated plan for users' actions, beyond simply submitting the passport after taking 20 risks, can make the passport more gamified. For example, awarding more points for checking items that are perceived as high risk may be a way of achieving a better integrated gamified experience and may also motivate students to take on more challenging linguistic tasks.[7] Therefore, in order to recognize the LRTI passport as fully gamified, game thinking, one of the pivotal factors in gamification, should be developed to a higher degree.

---

[7]We would like to thank an anonymous reviewer for suggesting this point.

Discussion: The LRTI mobile app

Almost all the game elements are equally present in the app, yet interaction with other learners is missing (see Table 2). Taking the digital app into consideration, it can be argued that the element of interaction with other users can be unlocked via the use of the internet. One feature of the app as distinct from the passport, which makes it more gamified, is feedback. Though limited and scripted, the app does provide instant feedback when a learner checks a risk off; this feedback comes in the form of pop-up messages such as "Good job! Keep taking more risks" or "Take 5 more risks to reach the gold level!" A completion stamp, a pop-up message and the change in the level of the user are different forms of feedback in the app. As a result of this instantaneous and immediate form of feedback, it can be argued the app is more gamified than the passport in this respect.

Moving to gamification elements, a similar pattern can be seen in Table 3 for the app. Like the passport, game thinking does not exist in the version of the app that was analyzed. Similar to the passport, the rules of the game can be modified to make learners more engaged in the system. However, more aesthetic features are utilized in the design of the app. For instance, more colors are used; adding filters to search for a specific risk makes the experience more streamlined and user-friendly; additionally, charts are available in the app to allow users to view the total number and frequency of risks they have taken as well as the types of risks they have taken (based on skills such as oral interaction, listening, reading, and writing as well as themes such as academic, professional, on campus, leisure, etc.). The other contrasting point between the app and the passport is the reward system discussed earlier.

Regarding the game category, the LRTI app can be classified under game-based L2TL if the app becomes a supplementary part of syllabuses in language courses. According to the definition of game-based L2TL presented earlier, the LRTI app is a type of game designed particularly for educational purposes and for particular context and audience with the help of technology. Therefore, the app can be considered as a digital game developed for educational purposes.

Suggestions for improving gamification in the LRTI

As already indicated, game thinking, one of the most important elements of gamification, is not fully developed in the LRTI passport and app. Game thinking can be described as the art and science of encouraging learners to continue a compelling path to mastery (Kapp, 2012). Creating a sense of competition and/or cooperation among the users of a service or a game drives their action and engagement to continue playing or learning.

It has already been mentioned that cooperation is present in some cases

where risk buddies worked together in taking linguistic risks. However, competition is probably the most recognizable element of a game especially in multiplayer ones (Reinhardt & Thorne, 2016). Therefore, competition should be involved in a way that it does not reduce motivation as reported by Hanus and Fox (2015). One way to add competition to the use of the passport is enabling learners to submit their passport more than once in a semester whenever they complete 20 risks. For instance, a leaner who has completed 60 risks would have three times higher chance of winning a prize. This can create a type of competition among learners to be engaged in the game more but not necessarily competing against each other. This is just one example of how game thinking can be injected into the LRTI.

Regarding interactivity, another minimally present element in the passport, an activity can be added to the passport where learners ask their classmates about their most challenging risk, easiest one, most interesting one, and so on. This activity helps them to exchange more stories and experiences of taking linguistic risks. There are some sections at the end of the passport where learners self-assess their experiences, write comments, and propose risks, but they are designed in a way that presupposes they be filled individually. More, interactive tasks such as filling out sections in pairs or as a group can be added to the passport to make it more gamified.

The app has greater potential for change than the paper passport. The system of rewards can be developed in the app to its full extent. Badges can be given to the users, for example, when they complete a certain number of risks marked as high. Badges can also represent a special theme in the app that tells a story. For instance, the badges can be the landmarks of different cities in the world and the user can be asked to collect all of them by taking more linguistic risks. These types of modifications to the app can also generate more interaction among learners when they share their new achievements. The addition of a leader board would be another feature to enhance the reward mechanism and competition, much as it is done in games.

Personalization of the app is another feature that can make the game more appealing. Using avatars can help the user build an identity in the game. This can lead to establishing purpose and meaning in the use of the LRTI app. Finally, connectivity and networking can unlock numerous other affordances in the app and promote learning by increased socialization (Reinhardt, & Zander, 2011). One of the many affordances of connectivity is the possibility to add the element of game thinking. For example, when learners are notified of a leading user taking a particular risk, or when they can see the most frequently taken risks by others, or risks that are marked as "H" by others, they may be motivated or feel compelled to take these linguistic risks as well. These are some of the many modifications that can be included in the app and tailored to

the needs of the learners to promote L2 learning.

To sum up, the app and the passport employed most elements of game and gamification to a similar extent. As a result, it can be questioned whether it is worth developing the app giving the complexity of coding and time required. The answer to this question is a resounding *yes* because the app has a very high potential in terms of user stats, reward system, connectivity with others, digital interactions, and immediate feedback.

Conclusion

Abundant opportunities of using French or English on campus at the University of Ottawa provide learners of either language with numerous authentic opportunities to practice their language skills. The LRTI passport booklet and digital app serve as potential tools to capture and document the nature of these activities as well as the degree to which learners were engaged and motivated by them. This study examined the extent of gamification utilized in the LRTI and outlined some future directions. The evaluation tool that was developed, based on the work of Kapp (2012) and Koster (2005) and dedicated specifically to gamification, represents one of the contributions of the study; however, the tool is only exploratory and may need future fine-tuning and re-development. To our knowledge, currently there are no other evaluation tools or rubrics in the literature that focus specifically on gamification analysis. Based on the results of the analysis, the LRTI passport and app can be considered gamified enough to encourage French and English learners in taking linguistic risks. The level of gamification is modest at this point but there is a vast potential for future development, especially in the case of the app.

Acknowledgments

References

Anstey, L., & Watson, G. (2018, September 10). A rubric for evaluating e-learning tools in higher education. *Educause Review*. https://er.educause.edu/articles/2018/9/a-rubric-for-evaluating-e-learning-tools-in-higher-education?

Cook, G. (1997). Language play, language learning. *ELT Journal*, *51*(3), 224–231.

Deterding, S., Khaled, R., Nacke, L., & Dixon, D. (2011). Gamification: Toward a definition. *CHI 2011 Workshop Gamification Proceedings: Using game design elements in non-gaming contexts*, Vancouver, Canada. http://gamification-research.org/wp-content/uploads/2011/04/CHI11_Workshop_Gamification.pdf

Figueroa Flores, J.F. (2015). Using gamification to enhance second language learning. *Digital Education Review*, *27*(21), 32–54. https://dialnet.unirioja.es/servlet/articulo?codigo=5495904

Griffiths, E. (2019). *L'autonomie ne se fait pas toute seule*: Linguistic risk-taking as a vehicle for communication strategy instruction. [Unpublished master's research paper]. University of Ottawa.

Griffiths, E., & Slavkov, N. (2021). Linguistic risk-taking: A bridge between the classroom and the outside world. *Canadian Journal of Applied Linguistics/Revue canadienne de linguistique appliquée*, *24*(2), 127–158. https://doi.org/10.37213/cjal.2021.31308

Hanus, M., & Fox, J. (2015). Assessing the effects of gamification in the classroom: A longitudinal study on intrinsic motivation, social comparison, satisfaction, effort, and academic performance. *Computers & Education*, *80*, 152–161. https://doi.org/10.1016/j.compedu.2014.08.019

Kapp, K. (2012). *The gamification of learning and instruction: Game-based methods and strategies for training and education*. Pfeiffer.

Kogan, N., & Wallach, M.A. (1967). Risk taking as a function of the situation, the person, and the group. In G. Mandler (Ed.), *New directions in psychology III* (pp. 110-117). Holt, Rinehart and Winston.

Koster, R. (2005). *A theory of fun for game design*. Paraglyph Press.

Mora, A., Riera, D., González, C., & Arnedo-Moreno, J. (2017). Gamification: A systematic review of design frameworks. *Journal of Computing in Higher Education*, *29*(3), 516–548. https://doi.org/10.1007/s12528-017-9150-4

Plato. (1943). *The Republic* (B. Jowett, Trans.). Books. (Original work published ca. 370 B.C.E.)

Reinders, H. (2017). Digital games and second language learning. In S. May (Ed.), *Language, education and technology* (pp. 1–15). Springer.

Reinders, H., & Wattana, S. (2012). Talk to me! Games and students' willingness to communicate. In H. Reinders (Ed.), *Digital games in language learning and teaching* (pp. 156–188). Palgrave Macmillan. https://doi.org/10.1057/9781137005267_9

Reinhardt, J. (2017). Digital gaming. In C. Chapelle & S. Sauro (Eds.), *Handbook of technology in second language teaching and learning* (pp. 202–216). Wiley-Blackwell.

Reinhardt, J. (2019). *Gameful second and foreign language teaching and learning: Theory, research, and practice*. Palgrave Macmillan.

Reinhardt, J., & Sykes, J. (2011). *Framework for game-enhanced materials development*. CERCLL G2T Project White Paper Series. Center for Educational Resources in Culture, Language and Literacy, University of Arizona.

Reinhardt, J., & Sykes, J. (2012). Conceptualizing digital game-mediated L2 learning and pedagogy: Game-enhanced and game-based research and practice. In H. Reinders (Ed.), *Digital games in language learning and teaching* (pp. 32–49). Palgrave Macmillan. https://doi.org/10.1057/9781137005267_3

Reinhardt, J., & Sykes, J. (2014). Special issue commentary: Digital game and play activity in L2 teaching and learning. *Language Learning and Technology*, *18*(2), 2–8.

Reinhardt, J., & Thorne, S.L. (2016). Metaphors for digital games and language learning. In F. Farr & L. Murray (Eds.), *The Routledge handbook of language learning and technology* (pp. 415–430). Routledge. https://doi.org/10.4324/9781315657899

Reinhardt, J., & Zander, V. (2011). Social networking in an intensive English program classroom: A language socialization perspective. *CALICO Journal*, *28*(2), 326–344. https://doi.org/10.11139/cj.28.2.326-344

Rhéaume, M., Slavkov, N., & Séror, M. (2021). Linguistic risk-taking in second language learning: The case of French at a Canadian bilingual institution. *Foreign Language Annals*, *54*(4), 1214–1237. https://doi.org/10.1111/flan.12561

Rosell-Aguilar, F. (2016). User evaluation of language learning mobile applications: A case study with learners of Spanish. In A. Palalas & M. Ally (Eds.), *The international handbook of mobile-assisted language learning* (pp. 545–581). China Central Radio & TV University Press.

Schmidt, R. (1990). The role of consciousness in second language learning. *Applied Linguistics*, *11*, 129–158.

Séror, J., & Slavkov, N. (2019). Soutenir la prise de risques linguistiques chez l'apprenant langagier. *Journal de l'immersion/Immersion Journal*, *41*(1), 9–13.

Slavkov, N. (2020). Where the magic happens: Fostering language learning, bilingualism and multilingualism through linguistic risk-taking. In T. Tinnefeld (Ed.), *The magic of language: Productivity in linguistics and language teaching* (pp. 47-69). Saarland University of Applied Sciences Press.

Slavkov, N., & Séror, J. (2019). The development of the Linguistic Risk-Taking Initiative at a bilingual post-secondary institution in Canada. *Canadian Modern Language Journal/Revue canadienne des langues vivantes*, *75*(3), 254–272. https://doi.org/10.3138/cmlr.2018-0202

Swain, M. (1985). Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In S.M. Gass & C.G. Madden (Eds.), *Input in second language acquisition* (pp. 235–253). Newbury House.