

# Instructional Sequences in Foreign Language Gamified Didactic Interventions

Jaume Batlle Rodríguez  
Universitat de Barcelona  
Barcelona, Spain  
jaumbatlle@ub.edu

Christine Appel  
Universitat Oberta de Catalunya  
Barcelona, Spain  
mappel@uoc.edu

## ABSTRACT

This paper reports on a study carried out in the context of an in-service teacher training programme aimed at teachers of foreign languages in Catalonia, teaching in language schools for adults. Taking as a point of departure instructional sequences that are characteristic of widely used pedagogical frameworks in foreign language teaching and learning, we look into how teachers gamify didactic interventions as part of their training. Firstly, we analyze how the different activities that compose a gamified didactic intervention are planned into an instructional sequence. In doing so, we focus on the relationship between the different components of gamification and the sequential organization of activities, with the purpose of gaining a more in-depth understanding of what specific gamification elements are meaningful for the sequence development.

## Keywords

Gamification; Foreign Language Teaching; Instructional Sequences; Narrative; Lesson Plan.

## ACM Classification Keywords

- Applying computing
  - Education
    - Computer Assisted Instruction
    - E-learning

## INTRODUCTION

In educational contexts, gamification is an increasingly popular methodological strategy. Over the past years, the amount of research on this field has increased [6], many scholars have welcomed the underlying effects of gamification on the students' motivation and engagement [3], and some authors have even come to affirm that research in the area is reaching a point of maturing [10]. However, as it is a methodological strategy characterized by the use and implementation of many elements, its development can be seen as complex. Teachers have to develop their gamified materials and activities thinking of their own context: the classroom. Although the use of ICT is most of the time present, the reality of the educational context pushes teachers to design gamified didactic interventions to be implemented in their specific workplace.

With this in mind, this paper aims to study in depth how a group of Foreign Language in-service teacher trainees develop their gamified didactic interventions with the

purpose of understanding what the relationship is between gamification and the sequence of activities the teachers develop within their gamified didactic intervention, as well as what specific gamification elements are meaningful for the sequence development.

## THEORETICAL FRAMEWORK

When teachers prepare a lesson, they plan what activities to carry out in the classroom, to what purpose and in what order. Lesson planning, whether explicitly or implicitly, is something that all the teachers do before going into the class. In foreign language teaching and learning, different teaching approaches have addressed instructional sequences in different ways [21]. While the communicative approach does not prescribe any established way to organize activities, the behaviourist-based PPP (Presentation, Practice, Production) approach [17] and the task-based approach [11] [19] [20] have dominated the two main perspectives on instructional sequence in Foreign Language Teaching. The PPP approach is based on deduction, that is, the teacher presents a situation with a specific content, which is understood and practiced by the students from more controlled practice to freer practices. This instructional sequence has more commonly been used to teach specific grammar content. The second one, based on the task-based approach, specifies three different kinds of activities: pre-task activities which provide input necessary to carry out the task; the task per se; and post-task activities, which are designed to promote reflection on specific elements of the completed task and can serve as transition to subsequent tasks.

Foreign language lessons can be developed in different ways, but mainly, textbooks and teachers follow one of the sequences described above or even both interwoven. However, the objective in both cases is different: the PPP approach focuses on the teaching of a specific item, commonly, lexical, grammatical or functional; on the contrary, a task-based lesson sequence is designed for the use of a language form from a communicative perspective. While in the first case the goal is to automatize a particular form [15], in the second type of sequence there is not only a language form goal but also a content-based goal.

Certainly, goals are fundamental instruments to create a lesson plan and, in that way, a lesson plan is similar to a game and to a gamified action. Goals are a key aspect in gamification design, due to the fact that they have a "direct impact on the motivation and behaviour of players" [9]. Goal-Setting Theory [5] [16] postulates that gamification due to its inherent goals, fosters motivation and that participants in a game are motivated to achieve the goal established. People play a game with the aim to achieve a specific goal, whether this goal is to save the princess or

control the world. The goal drives the story, understood as “a course of events that gamers can experience while playing a game” [4]. Learning goals and game goals can be different, but it is worthwhile keeping in mind that it is possible to merge them [18]. This is to say that actions and sub-actions needed to reach an overall goal can be driven by both types of goals, learning and game. In educational gamification, nonetheless, we have to take into account that “the learning goal is the knowledge and intellectual abilities we want the student to learn in the game, whereas the game goal is the actual goal the student/player is striving for in the game” [18].

As it has been pointed out above, instructional sequence in Foreign Language Learning is developed through activities designed to work with specific linguistic items and the development of communicative skills. Therefore, gamified didactic interventions (GDI) need to include activities that relate this specific content to the common elements of gamification. In this line, the study the GDI of a group of foreign language teachers has shown that points are more common elements than badges, the use of which is commonly associated with the use of points [2]. They find that badges are not used by the teachers in their study unless points are also used. They also point out that in the GDIs they analyzed, scoring points and badges is related with the realization of activities for the development of communicative skills (reading, writing, speaking and listening), rather than with activities focused on grammar or vocabulary. When teachers pointify activities related to the language system, they only take into account points. Badges, on the other hand, are used only to reward the students after productive communicative skill activities, such as writing or speaking activities, understanding their fulfillment as an achievement.

This study aims to understand how foreign language teachers construct GDIs. Specifically, we seek to analyze the distribution and relationship of the activities of a set of lesson plans. Bearing in mind that planned lessons are gamified lessons as well as foreign language learning lessons, we are going to examine which is the relationship between the activities, their goals and the common gamified elements. For this purpose, firstly, we are going to focus our attention on the gamified instructional sequence, its goal and sequence development. This first analysis will give us a broad view of how teachers organize the different activities that make up their game design. After that, the analysis will go into the specific use of gamified elements, specially, PBL and narrative, within the instructional sequence.

## DATA & METHOD

The GDIs analyzed in this paper were developed throughout a continuing professional development course on gamification [12]. The participants were in-service foreign language teachers in Catalonia (Spain). During the course, they carried out several activities with the aim to learn what

gamification means, which are the main elements that come into play in a gamified lesson plan, what kind of game-player profiles students can adopt and familiarize themselves with the main technologies available for gamification. The final task of the course was to plan a gamified didactic intervention that should be implemented in the teaching they carried out at their workplace.

The sample analyzed in this study includes all 29 GDIs that were developed by the participants of the course: 24 GDIs were developed by individual participants, and the remaining 5 were developed in groups. Participants were asked to fill in a form where they had to explain carefully what were the aims of the lesson they were planning, what were the gamified elements that would come into play during the lesson development and what was the sequence of activities and the timing that they were to follow. GDIs vary according to the particularities of the different school settings and student needs.

The analysis of the GDIs is carried out following a descriptive-interpretative method based on content based analysis. Since our aim is to discover how foreign language teachers organize their gamified sequence of activities, we are going to trace the gamified sequences and to establish what gamified elements are meaningful for the development and the order of the sequence. For the purpose of illustrating examples with maximum brevity, we only reproduce here extracts from the GDI planning forms written by teachers that are relevant to the aims of this study. The extracts have been translated from Spanish. All this will lead us to a better understanding of how in-service foreign language teachers perceive and understand their gamified interventions.

## RESULTS

The analysis of the data set in this study identifies the presence of three different kinds of instructional sequences.

a) **Sequences with a fixed order of activities.** These are sequences in which the order of the activities cannot be interchanged. In these sequences the narrative is linear and requires that one activity has to be done after another.

b) **Sequences with a partially fixed order of activities.** In these sequences only some of the activities are interchangeable: the order of the previous activities can be changed, but all of them have to be done before the final activity.

c) **Sequences with a free order of activities.** In these sequences the order of the activities is totally interchangeable. It does not matter if the order of the activities is different, if one appears before or after another.

Out of the 29 analyzed GDIs, 4 fall within the first type of sequence, 4 within the second and 21 within the third. Following we describe each of the above instructional sequences in detail, providing details of one example for each of them.

### Sequences with a fixed order of activities

The first type of instructional sequence identified in the analysis does not allow for activities to be interchanged. When a range of activities are built around a narrative, the sequence of activities can be understood as a way forward by the participants. The presence of narrative can imply that the participants involved in the game can surf through the story. When the participants enact a character, they become involved in a range of actions in order to go towards the final goal. As the narrative advances, the characters evolve and grow within the story. In this way, the story advances throughout the activities. The first activity, commonly, presents the narrative and the characters are established. Once the story is established, the second activity sets the characters on scene. In the second activity, students, through the use of their avatars or with their own identity as main characters of the story, carry out a series of actions that trigger developments in the story. These actions transform the character/s within the story and then, during subsequent activities, actions keep developing in a narrative scenario that leads to a certain development. The activities can be understood as chapters of a story which is being developed throughout the game.

One example of this kind of instructional sequence is found in GDI5. Excerpt 1 shows extracts from the description of GDI5 by its author, an in-service teacher of German as a foreign language. The game consists of a competition: during four sessions, students working in groups compete for a volunteering spot in a farm. Each group has to decide what nationality to adopt (Swiss, German, Austrian or Liechtensteiner) and which farm placed in a German speaking location they want to spend the summer in. The group that earns the most points wins the game, and is therefore the group that will get the funding for the summer stay at the farm of their choice. Each session has a goal which makes the storyline progress. The teacher in this GDI acts as a master, sending the information to the students and managing the events that make the narrative move forward. Before the second lesson, the students receive an email from the teacher representing the WWOOF association. Following the students initiate the application process to become members, which requires filling in forms, contacting administrative staff, and dealing with different bureaucratic procedures in the language they are learning, German. For each of these activities student groups get points and badges. At the end of the GDI, the teacher, still acting as a representative of the WWOOF, sends a message to announce to the students which is the group that scores the most points and is therefore the winner of the competition.

*Sommer auf dem Bauernhof (Summer in a Farm)*

*1st lesson*

*We begin searching for information about volunteer work in Swiss natural surroundings or rural areas. There are some institutions involved with volunteer work. We will focus on two of them: das Bergwald projekt and WWOOF. (...) Finally, each group will write a brief email to ask the*

*WWOOF for information on how to join the association, and in this way, obtain offers tailored to their interests. The teacher will receive the mail, and will answer back (...)*

*2nd lesson*

*This second lesson will begin at the computer room (each group in a corner) with the reading of an e-mail sent by the teacher, as representative of WWOOF, to all the groups with four different offers from farms.*

*(...)*

*4th lesson*

*With the results of each test, it will be decided which group obtains the maximum of points and, therefore, which team wins the competition. Then, each group will receive an answer via e-mail from the farm where they applied to go. Each group will be able to check its final score in Moodle.*

#### **Excerpt 1: GDI5 Summer in a Farm**

As we can see in the extracts above from the GDI5 planning form, the way the instructional sequence is interwoven with narrative is not excluding the possibility to use pointification. In fact, although the goal is linked to the narrative, the way to win the competition is scoring more points than the rest of the teams. However, the activities proposed are linked to the narrative, so the GDI could be implemented without points: simply by assessing the actions, the goal could be achieved provided that each step of the story is followed.

When the activities are not interchangeable in an instructional sequence, we find that each activity can be understood as a chapter of a story. Without carrying out an activity, the students can't move forward to the next one because the activities are developed through a narrative that is moving forward during the game. It doesn't matter if points are key elements to determine who wins, because the story is interwoven with the instructional sequence.

### Sequences with a partially fixed order of activities

The analysis of the GDIs designed by the participants in this study shows a second instructional sequence that is not as rigid as the former one, but still does not allow for a total reshuffling of activities. This type of sequence adopts a narrative that is close to the structure of a task, and the instructional sequence is carried out in different stages. First of all, students have to carry out different pre-tasks that will equip them with the necessary elements to carry out the main task. These enabling pre-task activities are interchangeable, that is, the order of appearance doesn't matter: what is important is to carry out the activities because in doing so students will acquire information and/or know-how that will enable them to carry out the task. In this type of sequences, the narrative is not understood as a story, but rather as a scenario-based narrative [8]: one scene where gamification is carried out mainly through the use of points and badges. Excerpt 2 illustrates the specificity of this kind of instructional sequence. GDI19 is developed in the teaching of Spanish as a Foreign Language context. It is constructed as a competition to determine the best film produced by the students. During 6 different stages, in groups and taking on

the role of a film production company, the students have to prepare, record and edit a short film in order to participate in a competition. A team of teachers decides how many points are awarded for each completed activity. The winner will be the group of students (or film production company) that scores the most points. Bearing in mind this game structure, in the first stage, the students are involved in an activity that sets the context. It is the first contact with the topic of the GDI and it is when the groups are formed. After this first stage, from the second to the fifth stage, the students in groups carry out activities to score points and also to prepare some elements to be included in the final product: the film. For example, the second stage is dedicated to the construction of the scenes, while the third one is focused on the soundtrack. The final stages are focused on the goal of the game. First of all, they have to create a film to participate in the competition. For that aim, in the fifth stage, the teams will use all the information that has been provided and all the products that they have created during the former tasks: for example, they have to think about a scene and add an original soundtrack, issues that have been taken into account in the former stages. Once the film has been recorded and edited during the fifth stage, awards are given in the final stage: it is the time to decide what team is the winner of the competition.

#### *Premios Dalí (Dalí Awards)*

*First stage: Group formation and cinema memorable scenes (...)*

*Test: the cinema in your lives. Answer a number of questions about our relationship with the cinema. (...). Film production companies should show their knowledge about celluloid world to achieve Goyeueros. We will broadcast the video "Memorable scenes of the cinema II" and the film production companies should say the title of the films. 10 scenes will be shown. The film production company that has got the question right will receive 50 Goyeueros.*

*Second stage: Cinema scenes in Barcelona*

*(...) Recognize the scenes of the main films recorded in Barcelona. We subdivide the film production companies in two groups.*

*1. They will prepare an oral presentation of one of the main areas or neighborhoods of the city where some short films have been recorded.*

*2. Competition: They should watch the trailer for the following films (...). They should answer a kahoot about the areas where the short films were made.*

*Third stage: Original soundtrack of cinema.*

*Reading comprehension, listening comprehension and kahoot test about the original soundtrack of Spanish cinema. Reward: 25 Goyeueros for each correct answer. It will be possible to add an original soundtrack to the short film. 50 Goyeueros per song.*

*(...)*

*Fifth stage: Making, editing and submitting short film to contest.*

*The film production companies will make the short film following the script that has been previously approved by the teacher. Students will still be able to introduce changes that might ensue during the recording or additional scenes that they might think of.*

*Sixth stage: Prizes ceremony*

*We will watch the short films rewarded that the jury have chosen previously. The winners should make a speech and will receive the award.*

#### **Excerpt 2: GDI19 Dalí Awards**

The order of the activities carried out before the creation of the short film which will enter the competition can be interchangeable. It doesn't matter if the students work with the original soundtrack first or with the construction of the scenes. The only important point is that the students have to work with both before starting the creation of the final product. The key of the enabling pre-task activities is that they provide the opportunity to progress beforehand in some aspects of the final task to facilitate their integration in the final product. If the teachers want the students to think of an original soundtrack for their final product, it's a good option to prepare previously some activities about original soundtracks. However, it doesn't matter when the activity has to be carried out provided that it happens before the final task. Therefore, this instructional sequence, very close to a task-based structure, allows for some activities to be interchangeable, but others not. Similarly to the sequences with a fixed order of activities, the goal of the game here is significant to the order of the sequence: whereas the former were constructed thinking of the goal of the narrative, in the latter the goal of the narrative is interwoven with the goal of the task. However, unlike the first type of instructional sequence, this one takes place in a static narrative or scenario: the students don't travel throughout the story, but the story is established as a scenario where a number of activities are placed.

#### **Sequences with a free order of activities**

The third type of sequences identified in the analysis of this study is one in which the order of the activities can be entirely interchangeable. In this type of instructional sequences, it doesn't matter if one action is done before or after another one: all the activities are equivalent in their importance and role within the narrative. The next example, GDI1 in excerpt 3, is designed for an English as a Foreign Language classroom and it consists of a game based on a questions and answers quiz format. The students, in groups, have to prepare questions that will be answered by the rest of the groups in the classroom. Every time the members of a group answer a question correctly they score a point. The group answering correctly the largest number of questions will score the largest number of points and, therefore, will receive a badge. The team holding the most badges wins the competition.

*Juego de los expertos (TheExpertsGame)*

*Start of the game: The game will be started by the team winning the quiz kahoot drawn up by the teacher. The*

*winning team will choose the topic and will start the roundtable questions.*

*Roundtable questions: the team awarding the badge will be the one to pose a question and, clockwise, questions and answers will be posed to the different teams. Every time a team answers correctly it will score 1 point, or 0 points if the answer is not correct. The obtained points in the roundtable are not cumulative and the teams will lose them once the badge has been awarded.*

*Expert panels: The questions which are not answered correctly will be answered by the experts at a later stage. The team acting as expert panel will have the possibility to score a point if their explanation is correct. These points can be cumulative and be exchanged by a badge or added to the scored points in the roundtable questions to, afterwards, win a badge. The team who takes the most badges will win the game.*

### **Excerpt 3: GDI1 The Experts Game**

If we take a close look at this gamified sequence, we see that the game is based on a range of questions that the students themselves have to create. The questions do not have any relationship amongst them, apart from the fact that all the questions are about some specific grammar topic. Questions can be asked at random, without any specific sequential development. The game, as a quiz game, could also be carried out mixing cards with questions and creating a heap of cards for the players to pick one and answer. In addition, students can also score points for their mastery in creating good questions. These points can also be obtained without taking into account a specific order of questioning.

Games based on questions and answers quizzes are common examples of GDIs with an instructional sequence activity order which is entirely interchangeable. It doesn't matter what set of questions comes first, because all of them have the same value: the participants get a point if they answer a question correctly. However, gamification based on a questions and answers quiz format are not the only ones following this instructional sequence. When the goal of the game is to score more points than the others, it is possible to find an interchangeable instructional sequence.

### **DISCUSSION**

The analysis of the GDI produced by in-service foreign language teachers has shown that the main goal of the gamified proposals and the narrative in them are key elements for the development of the lesson plans and their instructional sequences. We have found three different types of instructional sequence are developed in the analyzed GDIs, depending on the degree of interchangeability of their activities. The sequences constituted by activities with the sole aim of scoring points present an interchangeable order because all activities have the same value and the narrative is static, taken as a scenario. On the contrary, if the narrative is not static, the activities are instrumental to how the story is developed. These activities, then, are not interchangeable, because they are part of the story and constitute a sequence

of story events along which the students move forward. In order to attain the goal of the game it is necessary to follow the storyline of the narrative, and winning hinges on being able to successfully complete the last activity. Aside from these two instructional sequences, we found a third one, which is similar to a task-based sequence. In this case, the narrative is static and does not set the need to establish a specific instructional sequence. The enabling pre-task activities have an interchangeable order, so their main purpose is to provide students with tools to carry out the task. However, the task is always at the end of the instructional sequence, so the activities are not entirely interchangeable. In this case, the narrative does not have a storyline, but is rather built out of a series of metaphors: the roles of both students and teachers, pre-tasks and the task itself all have a metaphor that fits the set scenario.

The analysis carried out has shown that there are meaningful gamification elements to determine if sequences in GDI are organized in a way that the activities can be interchangeable or not. The main element to determine this is the narrative. The story determines a series of activities, and a series of actions along which the characters move forward. The narrative, a key element in gamified interventions [1], and establishes a meaningful order in the sequence.

Pointification [13], on the other hand, is the great element that comes into play in the analyzed GDIs. From an instructional sequencing point of view, it's worth noting that when pointification is the only element that is taken into account, the posed activities can be entirely interchangeable. The simplicity of thin layer gamification [7] plays a role in the instructional sequence. In the cases where the game is constructed with the sole aim of knowing who is scoring the most points, the activities always have the same purpose and their order can be randomly purposed. However, when the GDI shifts to deep level gamification [7] with the presence of a narrative, the instructional sequence is affected resulting in a less interchangeable collection of activities.

In addition to narrative and pointification, we also identified a third factor that plays a role in the way teachers organize activities into a sequence. In some cases teachers' prior experience in drawing lesson plans, and their familiarity with instructional sequences associated to the current prevailing pedagogical approach determined the order of activities. In the analysis we found cases in which teachers follow a task-based organization, so the GDI is composed clearly by enabling pre-task activities and a final task. In this kind of instructional sequence, the narrative is not story-based but rather a scenario, it follows then that the position of some activities cannot be interchanged so as not to lose the structure of the pedagogical action (pre-task activities will always precede the final task), whereas the position of some of them (pre-task activities) is interchangeable. It should be noted, however, that this kind of instructional sequence is the least frequent in the analyzed GDIs in this study. This may suggest that in the process of gamification design observed

in this study, game structural elements are more prevalent than the pedagogical approach in use when it comes to setting the order of a sequence of activities.

## CONCLUSION

In this paper, we have seen how activities in gamified didactic interventions are organized in different types of instructional sequences. The analysis finds three different ways to organize the activities. The main difference between the ways of organizing activities is the possibility to interchange them. In some cases, the activities can be interchanged without losing the gamified sense, but in other cases this is not possible. The interchangeability is related to the presence of the narrative, that marks a specific instructional sequence, or to the presence of pointification as the only goal, that provoke the understanding of each activity as independent and with the same value and, therefore, as interchangeable.

The identified sequences with a fixed order of activities in this study were heavily determined by narrative. This is so because all instances presented a linear narrative. The inclusion of a wider variety of more complex narrative structures would change the definition of the sequences as observed in this study. This raises the question of whether language teachers have the sufficient knowledge and expertise in different types of narrative structures to be able to design the best possible GPI, and highlights the importance of including this in Gamification teacher training programmes.

We still have a long path ahead in the area of gamification and foreign language teaching. In this context in which gamification is being increasingly implemented, further research is needed to understand how teachers use and conceive this methodological technique and how their students react to it and benefit from it. In accordance with [14], we suggest that it is necessary to capture and better understand how teachers design gamified activities. From a teacher training perspective, the possibility to know how in-service teachers understand gamification is necessary to develop good training practices and identify the essential elements of such training. The extent to which teachers have access to high quality teacher training programmes will determine how feasible it is to apply gamification to the foreign language classroom, and streamline good gamification practices.

## ACKNOWLEDGMENTS

Jaume Batlle and Christine Appel gratefully acknowledge the grant from the Spanish Government to GAMELEX, “La gamificación en la enseñanza de lenguas extranjeras en adultos: un estudio basado en diseño” (EDU 201567680-R). Ministry of Economy and Competitiveness: Proyectos I+D del Programa Estatal de Fomento de la Investigación Científica y Técnica de Excelencia, 2016-2018. Webpage: <http://www.ub.edu/realtic/es/>

We also would like to thank to the members of the research group RealTIC for fruitful conversations on the topic and

collaboration in the design of the teacher training programme in which data collection took place.

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