



# Engagement as a key to success for ESL learning



Co-funded by  
the European Union

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# Acronyms

Before inviting you to enthusiastically dive into our booklet, please check the short list of acronyms below that you are going to meet throughout your reading experience.

CEFR: Common European Framework of Reference for Languages

DGBL: Digital Game-Based Learning

EFL: English as a Foreign Language

ELF: English as a Lingua Franca

ELT: English Language Teaching

ESL: English as a Second Language

GBL: Game-Based Learning

SLD: Specific Learning Disorder

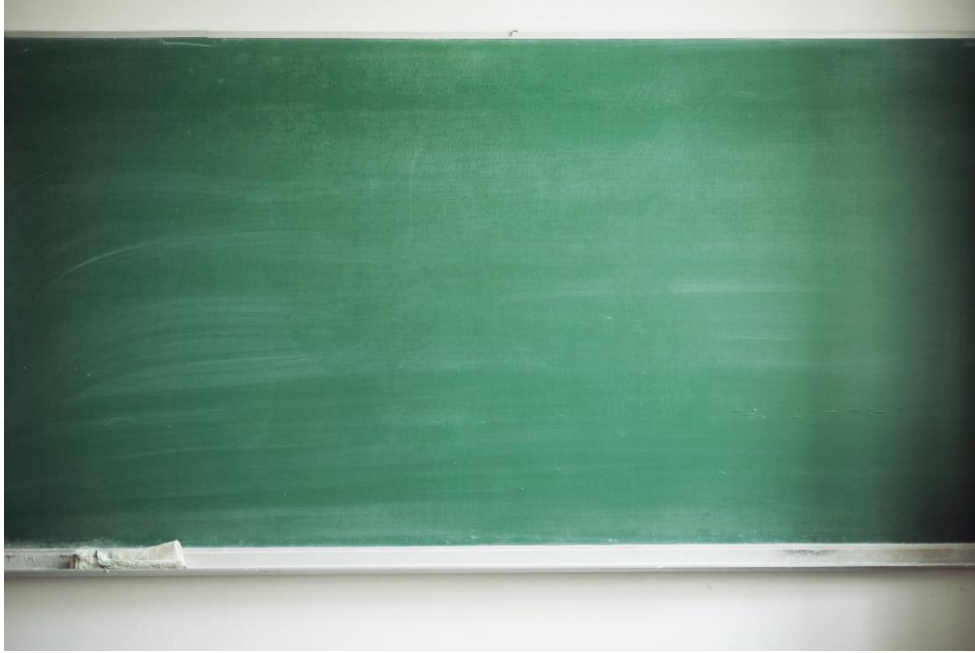


# Introduction

With about **90% of Europeans choosing to learn** it at school (Devlin, 2020), **English** has definitely attracted a lot of attention. The popularity of the language, however, does not make it an easy school subject to master.

The learning process in general, then foreign language learning as a whole, and finally the English language learning more specifically, all bring **a certain degree of complexity and a set of obstacles** that can make the path to mastery of Shakespeare's language a rocky one.

In addition to the inherent challenges of learning English, **students may be completely disengaged and unmotivated**. The fact is that, unfortunately, engagement seems to decline while students progress through their curriculum, with the lowest level in high school (Marks, 2000). In a world that is increasingly digital and filled with interactive content, traditional education may feel rather dull and unattractive to students (Lister, 2015).



Fortunately, teachers have the power to boost their learners' engagement. **Gamification and game-based learning (GBL)**, for instance, can be **effective learning tools to improve students' involvement** in the classroom.

In this booklet, we will explore the topic of **student engagement with their learning of English as a second language (ESL)**.



**Section 1** copes with the challenges that students may face during their learning process. This section addresses the complexity of learning in general and the challenges of acquiring English more specifically. To get a more accurate picture, we carried out **a survey with 25 teachers around Europe** and collected their views on the challenges encountered by their students. **Students with Specific Learning Disorders (SLDs) may face additional challenges** when learning a second language, which is also discussed in the first section.

**Section 2**, on the other hand, is focused on engagement and motivation, and how these two concepts can help overcome the learning challenges described in section 1. A theoretical explanation is provided, followed by suggestions and ideas on **how to make learning more engaging with the help of a digital environment**.

Then, **section 3** introduces gamification and lays out how this process can ignite student engagement. Terms such as “gamification” and “game-based learning” are explained, as well as why they are key elements to support engagement. The learning gains that digital games can bring is also explored.

Finally, **section 4** reveals the benefits of gamification and game-based learning inside and outside the classroom. Some common myths surrounding video games are also debunked.

# SECTION 1

## Challenges in second language acquisition

### 1.1. What are the challenges that most students encounter when learning English?

#### Learning: an amazing and complex phenomenon

If you look at the entry of the word “learning” in a dictionary, you will get a very short and concise definition.



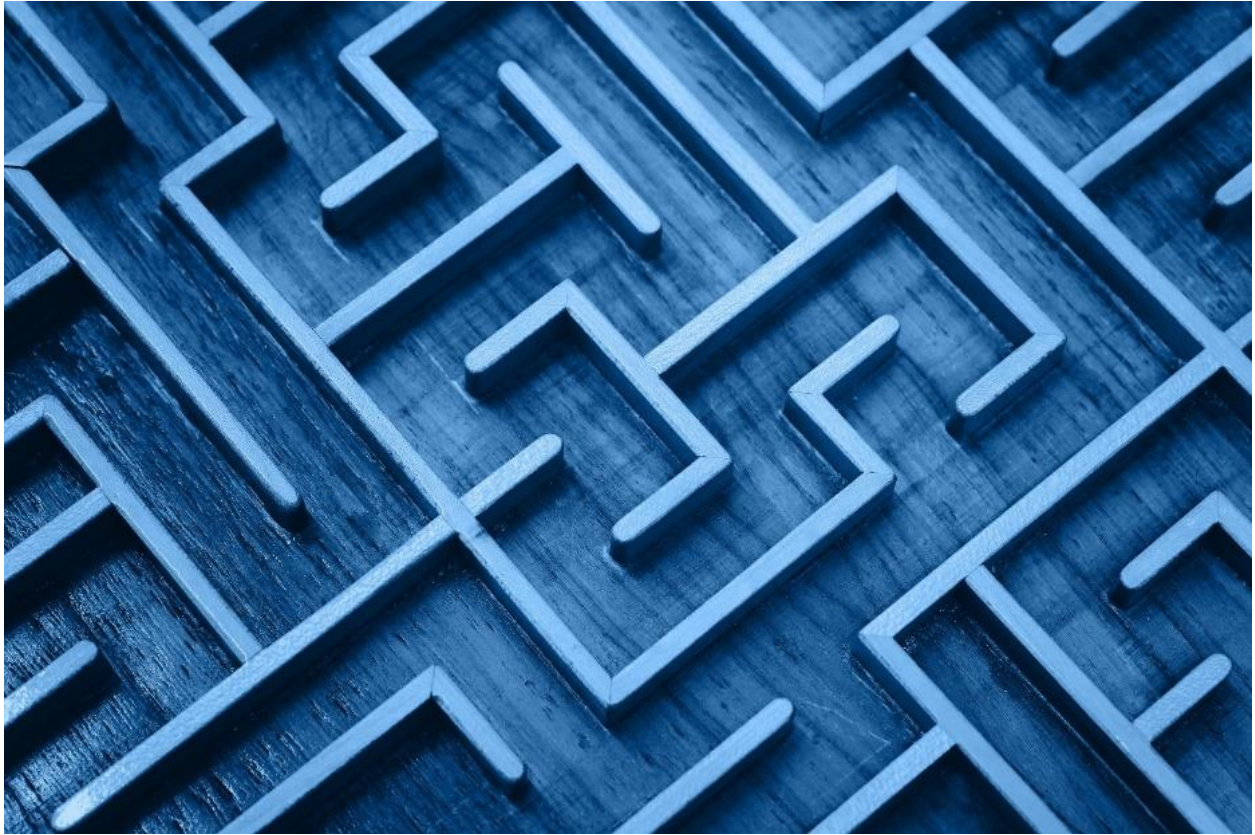
**Learning:** “the process of **gaining knowledge** and **experience**, for example by studying”

(source: [Macmillan Dictionary online](#))

This definition, albeit effective and straightforward, doesn’t convey the complexity of how learning actually occurs. As a matter of fact, **learning** is influenced by a plethora of factors, involving **conscious and unconscious mechanisms and physical, psychological, cognitive, social**



**and emotional processes** (Darling-Hammond et al., 2020). In addition, learning occurs in several places (at least at school and at home) and at different times.



This multifactorial aspect of the learning process is illustrated in Figure 1. This figure presents interrelated areas that play an important role in learning as identified by Darling-Hammond et al. (2020). At its centre is the concept of the “whole child”, where a student is treated in connected ways and care is personalised to the individual.



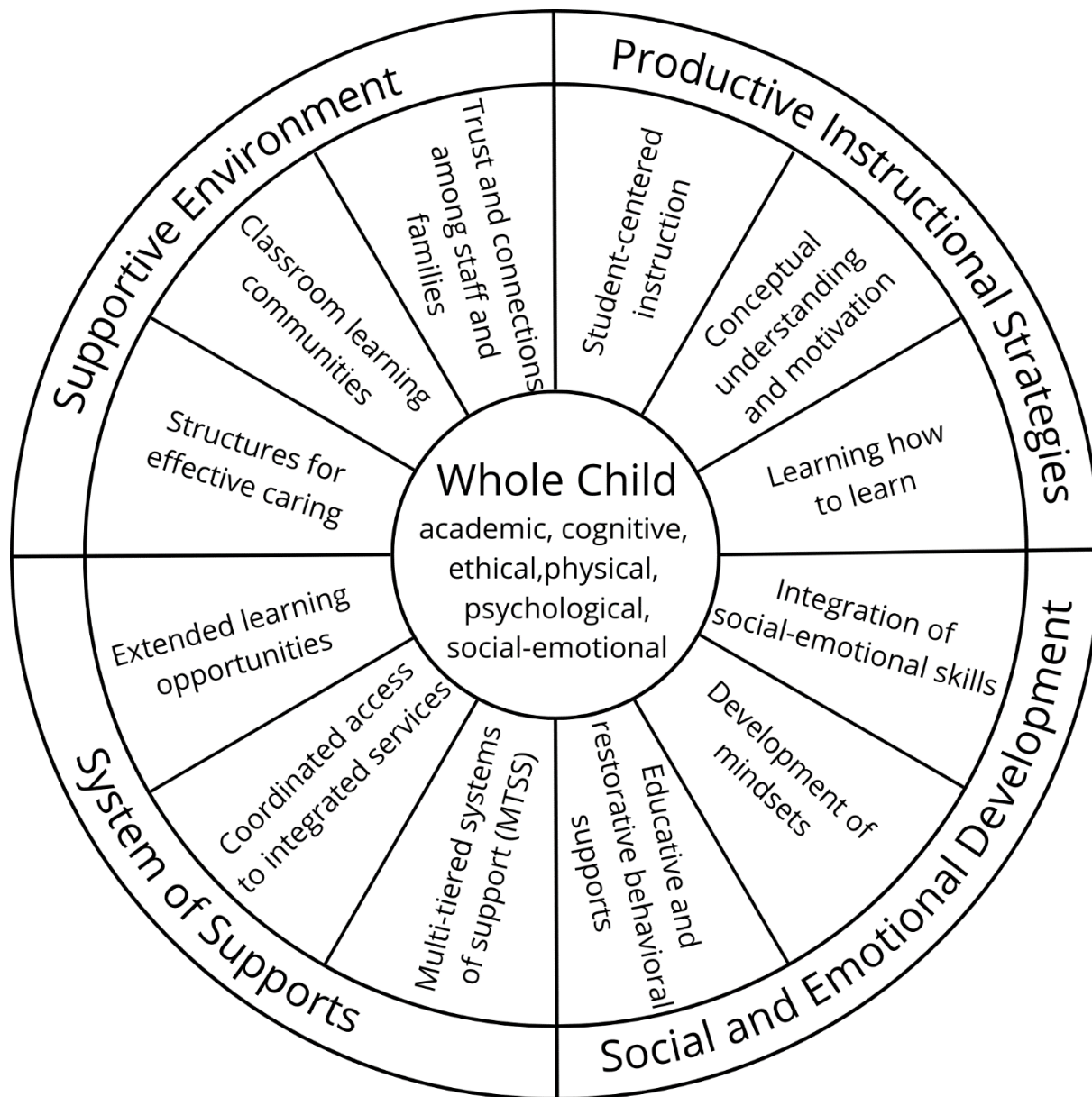


Figure 1. Science of learning and development principles of practice (Darling-Hammond et al., 2020, p. 98), simplified version.

With this idea of the multiplicity of factors comes the understanding of the somewhat fragile nature of learning: **if one pillar is compromised, the whole learning process becomes more challenging.**

In a nutshell, many things can make learning challenging for your students. **It is essential that the root causes of their difficulties are identified** in order to support them effectively. One

reason that hinders learning, for instance, could be **specific learning disorders (SLDs)**, that some of your students may have. The topic of SLDs will be developed further in section 1.2 (starting page 22).



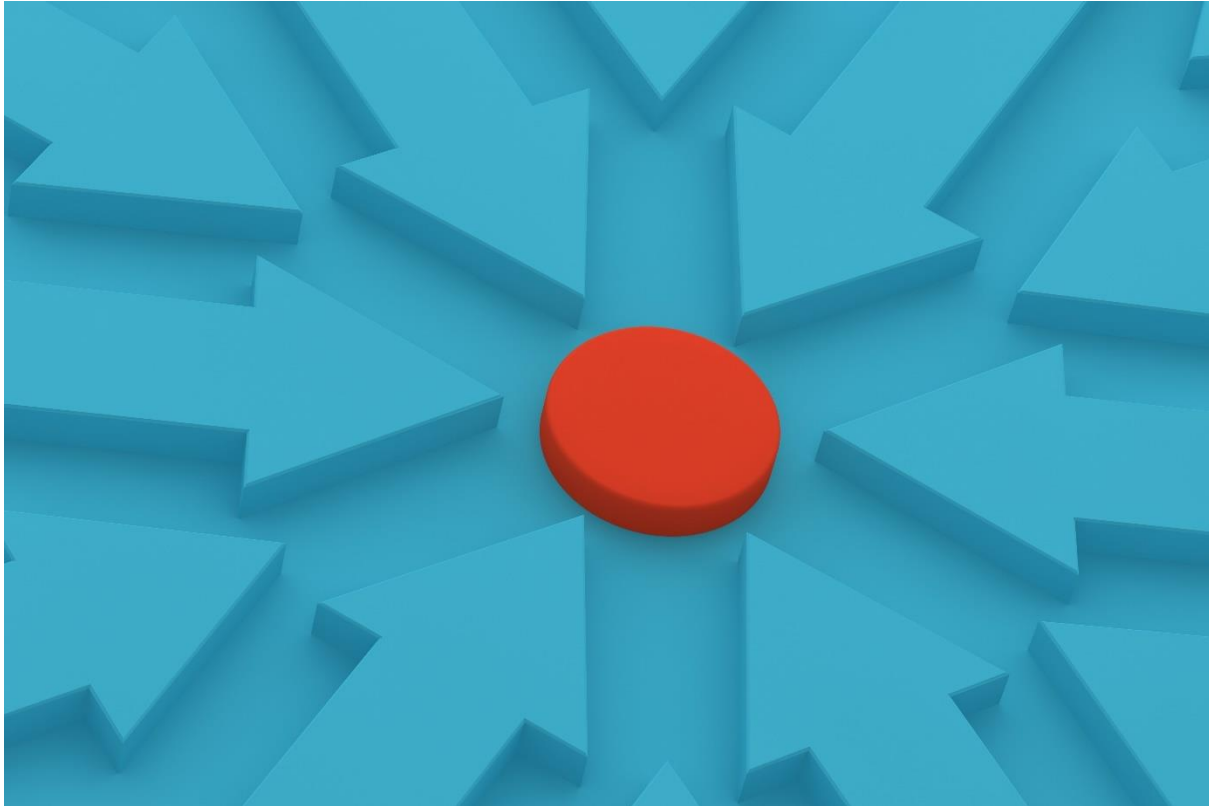
In addition to the aforementioned sources of potential difficulties, there are always specific challenges inherent to the field that is taught. Learning a foreign language such as English, as will be discussed below, brings its own set of obstacles. **No matter the difficulty, however, engagement always remains a key element in their tackling.**

## **ESL learners' profiles in a digital world**

Before discussing specific challenges involved in ESL, it seems important to address two aspects:

- a. We need to define “ESL” and how we are going to use this term throughout the D-ESL project.
- b. We need to depict the profile of nowadays learners of English.

ELT, EFL, ELF, and ESL... a multitude of terms to refer to English teaching



To begin with, there are several terms in the literature that cover different aspects of English teaching, with some granularity. The acronyms ELT, EFL, ELF and ESL are often encountered (Fogg, 2019).

**ELT** simply stands for **English Language Teaching**. It can be thought of as a generic term.

The term **EFL** means **English as a Foreign Language** and is generally used in the literature to refer to the teaching of English in a non-English speaking country or environment.

**ELF** is not a typo of EFL, but stands for **English as a Lingua Franca**. It refers to the teaching of English aimed at communication with a variety of speakers, irrespective of their native language.

Finally, **ESL** means **English as a Second Language**. Formally, in the scientific literature, its main usage refers to the teaching of English to non-native speakers in an English-speaking environment (in countries where English is the, or one of the most important languages). In practice, however, the term 'ESL' is often used in a broader sense. It can, for instance, simply refer to learning English in immersion schools. It also occurs in the literal sense to refer to teaching English as a second language, regardless of the language of the country or of the school program.

For D-ESL, **we opted for the use of ESL in that broader sense**, because its usage is very common and because most Europeans effectively learn English as their second language in school.

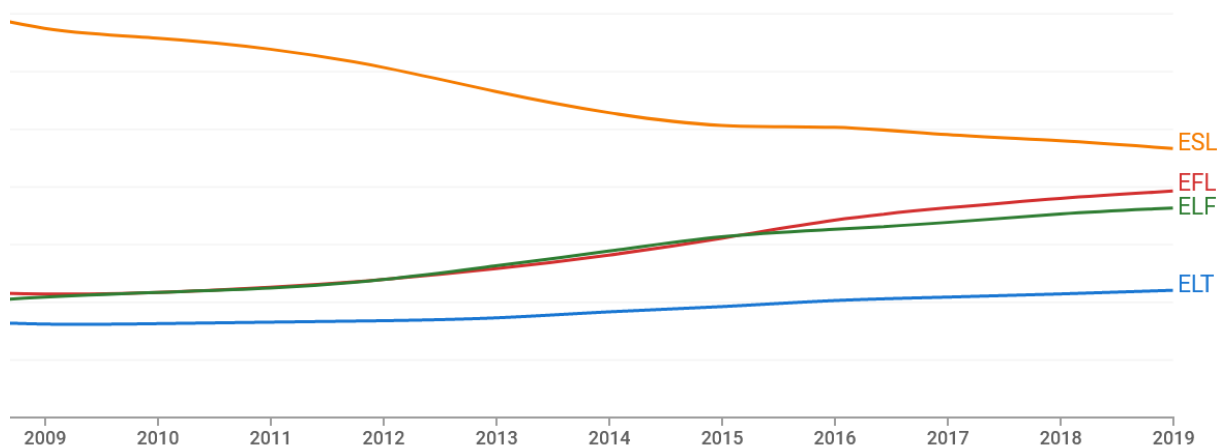


Figure 2. Use frequency of ESL, EFL, ELF between 2009-2019, according to Google Books Ngram Viewer (English corpus 2019)

## Profile of English students

Let's try to draw an up-to-date profile of students in our increasingly digital world. Of course, we should **bear in mind that it is impossible to depict the variety of students in one single profile**, but we will try our best to offer a general picture of the students in Europe.



Today's students are generally **technology savvy**, as technology is ubiquitous. Many of them have become **disengaged with traditional instruction**, which some qualify as “stale, bland, and almost entirely stuff from the past” (Lister, 2015).

They **expect to be engaged**, require **multiple streams of information** and prefer **frequent and quick interactions** with the content (Van Eck, 2006).

They generally heavily use technology for entertainment purposes and, subsequently, **most of them play video games** on a regular basis. For example, in 2020, 79% of 11 to 14 years old Europeans were video games players, on smartphone, tablet, console or PC (ISFE, 2021).

Students who play video games can be **casual players** – i.e. they don't play very often and probably mainly with their group of friends – and **gamers**, who dedicate a large amount of their free time to playing video games (Iacovides et al., 2011). Finally, it is important to note that, contrary to some stereotypical misconceptions, **both male and female students play video games, with 47% of European players being women.**

For all these reasons, **digital games can be the perfect fit to appeal and engage your students.**



A word of caution, however. Even though most of your students may have easy access to technology to a wide extent, it may not be the case for some of your students in more precarious situations. It is important to make sure that these students are not left behind and have access to the same quality of education as other students.

## Challenges when learning English



To know more about the challenges encountered in learning English, we questioned a sample of **25 English teachers across Europe**, so that they could share their observations. We first identified **several intrinsic and extrinsic challenges** and asked the teachers to select those that their students were coping with. Besides the pre-defined challenges, teachers were able to add their own options to the form, so that we could gather more precise information. The results of these two questions are shown in Figure 3 and Figure 4.

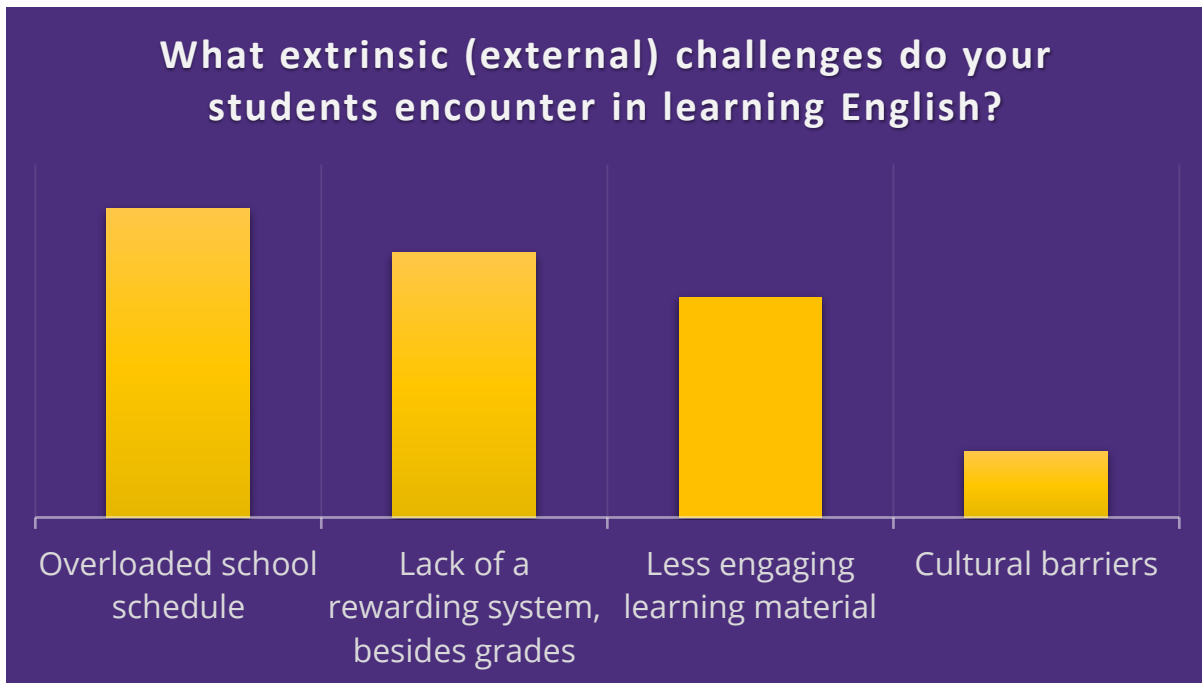


Figure 3. Proportion of identified extrinsic challenges encountered by students learning English, as viewed by 25 English teachers across Europe

Starting with the **extrinsic challenges**, the option that was selected most was **“overloaded school schedule”** with 56% of respondents selecting this answer. This is then closely followed by the “lack of a rewarding system, besides grades” with 48% of answers and “less engaging learning material” with 40%. “Cultural barriers”, it seems, was not seen as much of an issue by our 25 respondents.

One respondent from Macedonia also specified the lack of possibilities in their country for engaging extracurricular activities, due to bad Internet connection.



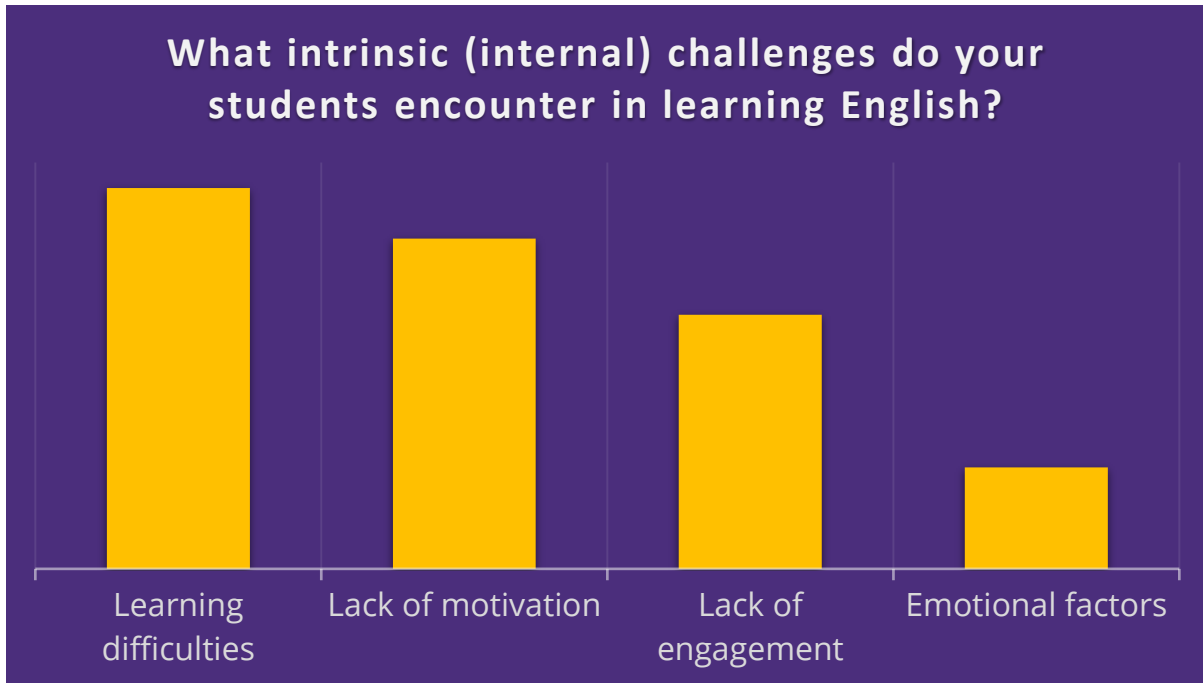


Figure 4. Proportion of identified **intrinsic challenges** encountered by students learning English, as viewed by 25 English teachers across Europe

With 60% of the respondents selecting this option, it seems that the first **intrinsic challenges** encountered by students are “**challenges due to learning difficulties**”. This is then closely followed by “**lack of motivation**” selected in 52% of the answers, and then “**lack of engagement**” with 40%.

Regarding these aspects of motivation and engagement, the majority of the respondents strongly agree (68% of them) or agree (16%) that motivation and engagement have a high impact on their students’ success, as shown in Figure 5.

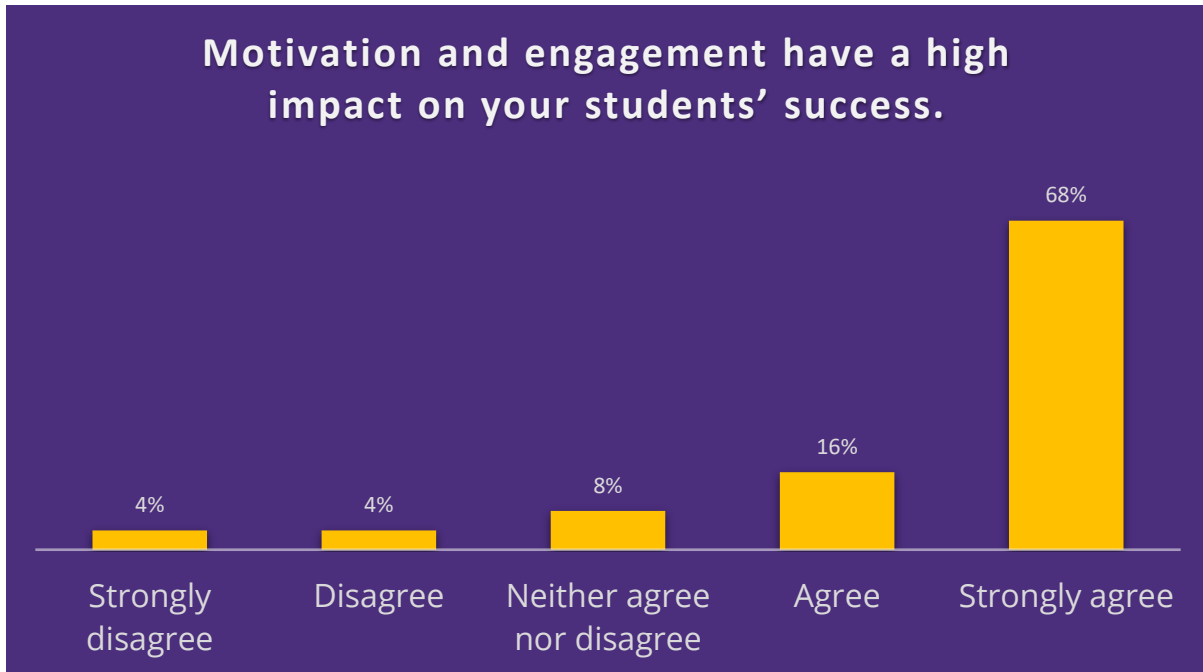


Figure 5. Opinion of the 25 English teachers of the survey regarding the impact of motivation and engagement

Furthermore, this questionnaire highlights a real **desire from the teachers to adopt engaging teaching methods**. The answers show enthusiasm and expectations with regard to game-based learning (GBL), which was seen as a very good way to improve the English level for students with learning difficulties, as shown in Figure 6.

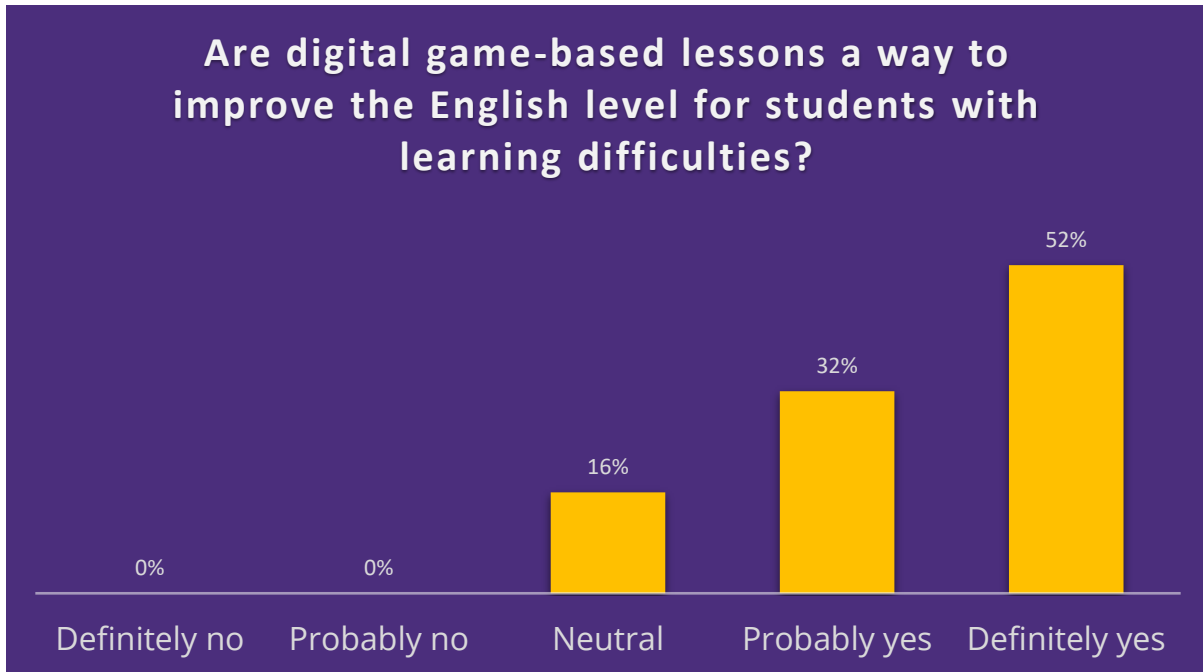


Figure 6. Opinion of the 25 teachers on the use of DGBLs as a way to improve the English level of students with LDs

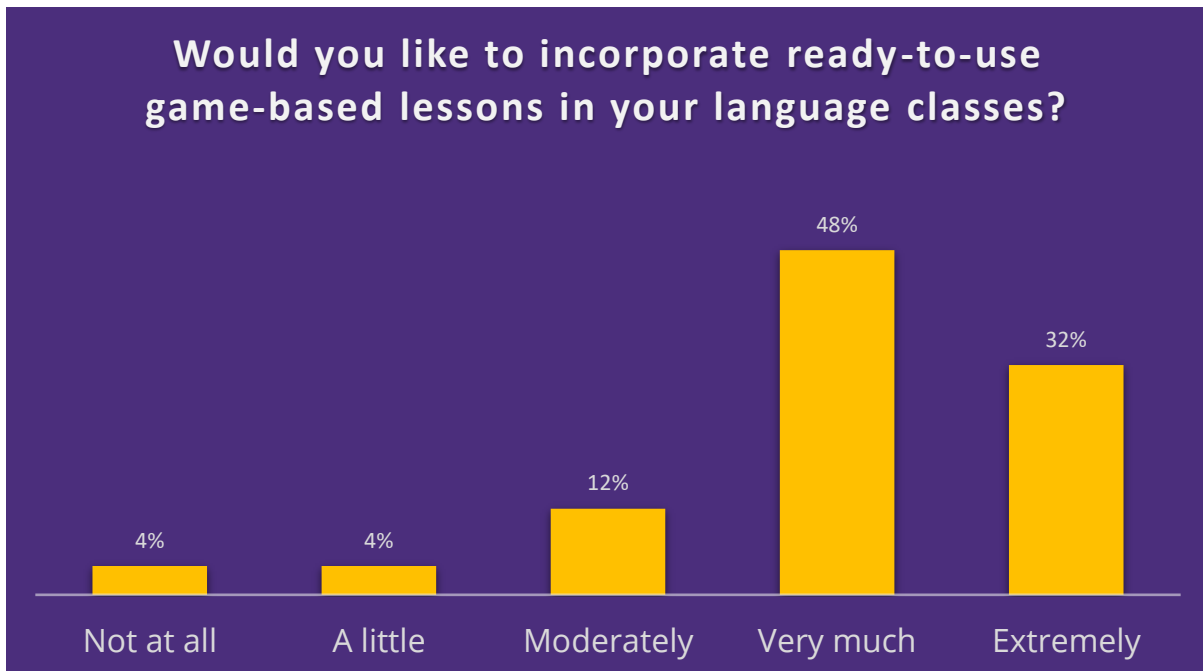


Figure 7. Teachers' will to use ready-to-use GBL

In addition to the general view that we gathered with the survey above, let's highlight a few **challenges that are inherent to English learning.**

The aim of language teaching is to help students develop productive skills (**speaking** and **writing**) and receptive skills (**listening and reading**) in the target language. To measure these skills, language teachers can rely on the descriptors defined in the Common European Framework of Reference for Languages (**CEFR**) and its companion volume (Council of Europe, 2020). Each student may face different challenges in learning these skills, but some common difficulties can be identified.

**Productive skills can be the most challenging to acquire**, as students need to go beyond mere understanding. Students may also feel anxiety and fear of the judgement of the language they produce.



This is especially true for the **speaking skill**, for which students can feel more exposed, in part due to the direct nature of most oral communication. **Lack of desire** to speak in front of others, lack of **self-confidence, hesitation, nervousness, inhibition and lack of vocabulary** are several factors that can hinder the learners' speaking capabilities (Ying et al., 2021). During the COVID-19 pandemic, speaking proved to be even more challenging, with the change of teaching paradigm that had to be adapted to an online, distant context; and this continues to show its effects in everyday teaching.

**Speaking is also hard for English learners, because pronunciation can make very little sense to them.** Indeed, English is not the most consistent language in that respect, far from it, with for instance words such as “though” (/ðəʊ/), “through” (/θruː/), “thought” (/θɔ:t/) and “tough” (/tʌf/), or “read” (/ri:d/) and “read” (/red/) that have different pronunciations. **Knowing a word in its written form is rarely enough for learners to be able to use it in speech correctly.** Accent, stress, intonation and rhythm are also challenging factors in speech (Gilakjani et al., 2011). The main cause for these difficulties is the fact that **learners have to adapt the conceptual patterns internalized with their first language.** For all these reasons, pronunciation, in addition to lack of vocabulary and grammar mistakes can make speaking very frustrating and even embarrassing for some students, who would rather remain silent.



To some extent, the **listening skill** is also **affected by the pronunciation issue.** As a matter of fact, the mental representation of how a word sounds may cause troubles for learners. They may not make the connection between the words they hear and the written form that they know, but think is pronounced differently. In addition, contrary to reading, where learners can take their time and visually identify specific words that are more problematic for them, listening is a more “instant” skill. **Students may feel anxiety caused by the lack of control they have**

**over the listening material**, and by anticipation of the questions and evaluation that may follow the listening activity.



The mental connection between words' vocal and written representations is also causing problems for the **written skill**. **Students tend to write according to their pronunciation, which may result in poor spelling** (Moses & Mohamad, 2019). The lack of vocabulary and of grammar knowledge is also a source of frustration, just as for the other productive skill that is speaking.



Finally, **reading** may not hold the title of the most difficult of the four skills, but it remains an essential piece of language learning. Students need exposure to written content, if only because **reading and writing are interrelated** (Moses & Mohamad, 2019). Thus, reading will support students in the development of their writing skills. Reading activities offer also the opportunity of being exposed to new vocabulary.

For all of the above skills, especially with regard to the productive ones, come two essential building blocks: **vocabulary and grammar**. Vocabulary is the fundamental element in constructing sentences, while grammar provides structure to convey detailed meaning. With limited vocabulary or knowledge in grammar, your students may face anxiety to produce or understand language.



## 1.2. Language learning challenges with regard to learners with SLDs

In addition to the aforementioned challenges and difficulties that every learner may face, some of your students are also probably dealing with **Specific Learning Disorders** (SLDs), also called “**Dys disorders**”. Indeed, around 10% of the population is affected by at least 1 SLD (Butterworth & Kovas, 2013).

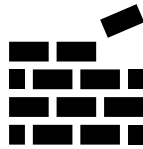
SLDs can result in difficulties regarding **memorisation, organisation, time management and attention**, but also represent **additional barriers to the development of the four language skills that are speaking, listening, reading and writing**.

There are several SLDs, including language related SLDs such as **dyslexia, dyspraxia, dysgraphia, dysphasia and dysorthographia**, plus **dyscalculia**, which results in difficulties with numbers and mathematics. In many cases, these SLDs can co-occur. **Adaptations can be taken to support students with SLDs** toward successful learning.



## Are weak language skills in the mother tongue a source of difficulty in learning a second language?

Students with one or several SLDs affecting language start with the disadvantage of already struggling with one or several skills in their own first language. The problem is that **success in the second language largely depends on the skills developed in the first language**, as the first and second language are interdependent (Nijakowska, 2020).



### Dyslexia: reading and writing

**Dyslexia** is the most common SLD and it **affects reading**. Dyslexic students have **poor phonological awareness**, meaning that they do not correctly relate letters to the sounds that these letters represent. When it comes to learning languages such as English, this factor also makes the **written skill more difficult**, as it makes spelling particularly hard. Reading can take all their mental resources and focus, resulting in poor comprehension and retention of what they have just read. **Asking a student with dyslexia to read aloud in front of the class should always be avoided as it may completely break your student's self-confidence.**



### Dysgraphia and dysorthographia: writing

**Dysgraphia** is an SLD that **affects written language**. Handwriting may be hard or impossible to read and may contain many spelling mistakes. **Dysorthographia** is another SLD affecting writing. As opposed to dysgraphia, it is not that handwriting is necessarily difficult in itself, but

the association between the sounds of the language and their written forms is particularly problematic.



### Dysphasia: speaking and listening

Dysphasia **affects speaking and/or listening**. A person may have trouble putting together words to form a sentence, following grammar rules, or may say made-up words without realising it. Therefore, oral communication can be very difficult.



### Dyspraxia: writing, speaking, reading

Finally, **dyspraxia** is a disorder affecting fine and/or gross motor coordination, which can make **writing, speaking or reading** difficult.



All SLDs are **neurological disorders that have nothing to do with the intellect**. Your students with SLDs have therefore as much potential as your other students. If you are interested in the subject, we suggest that you take a look at our DYS-friendly practice sheets that cover SLDs, for more information: <http://d-esl.eu/index.php/en/resources/>.

## SECTION 2

# How can teachers overcome these challenges in the classroom?

Two very important factors that will help the tackling of the challenges described above are **motivation and engagement**. In this section, both concepts will be theoretically explored and defined, followed by practical advice on how technology can be used to foster engagement.

### 2.1. Engagement and motivation are key factors towards language acquisition for all learners

Before going further, we need to fully understand the meanings of the terms “engagement” and “motivation”. When looking at the entries for these words in a dictionary, such as in the “Macmillan Dictionary Online”, we are provided with the following definitions:



**Engagement:** “the **feeling** of being **involved in a particular activity**” (source: [Macmillan Dictionary Online](#))



**Motivation:** “a **feeling** of **enthusiasm** or **interest** that makes you **determined to do something**” (source: [Macmillan Dictionary Online](#))

We can already infer that motivation and engagement are both concepts positively related to doing an activity. But we need to explore deeper these two terms in order to understand their role in education and in language learning.

## Student engagement

In education, “**student engagement**” is not limited to the feeling of **involvement** in the learning activity, but also to the **degree of attention, interest and curiosity** of the students (Gao et al., 2020).

In the literature, student engagement is generally described as a construct that includes three dimensions: behavioural, emotional and cognitive.

To begin with, **behavioural engagement** is the dimension of participation and involvement in academic activities (as well as in social or co-curricular activities). It can also incorporate the notion of positive conduct and the absence of disruptive behaviour such as skipping school.

Secondly, **emotional engagement** is about a sense of belonging or connectedness to the school. It is focused on the extent of positive and negative reactions towards teachers, classmates and the school. A study carried out by Halm (2015), for instance, indicates that at the core of student engagement is a bond between teacher and students and a relationship of mutual respect and trust.

Lastly, **cognitive engagement** is linked to the idea of self-investment in learning and the effort and willingness to understand and master complex ideas and skills. It can basically be explained as the mental willpower that students may invest in their learning.

These three aspects are pieces of the same puzzle that are essential to any learning in school education. **Students who are actively engaged in learning learn more, learn better, and actually enjoy the classroom experience** (Halm, 2015).

For this reason, **the study of student engagement has attracted growing interest**. To measure student engagement, and its three dimensions described above, scientists have resorted to traditional methods such as student self-report, teacher ratings, interviews, etc. However, there are also more advanced methods, with for instance Gao et al. (2020), who have experimented with a more technological approach. This study involved a wristband full of sensors to monitor body indicators of engagement, as well as an indoor weather station to study the influence of environmental factors (room temperature, humidity, CO2 level, sound level, ...). The idea is that, with more accurate methods to measure engagement, researchers can study learner's engagement with more precision.

Unfortunately, **engagement seems to decline while student progress through their curriculum**, reaching its lowest levels in high school. Marks (2000), for instance, estimates that 40-60% of high school students are disengaged. Even though the study that highlighted these numbers was carried out in the USA and the results may not be directly transposable to the European context, one can infer the extent to which students can be disengaged with learning. With that come problems such as **low academic performance, disaffection, and high dropout rates**.



Therefore, it is essential to foster engagement in schools. A variety of active learning experiences can greatly help, for instance with the use of video games and interactive digital material (Halm, 2015).

## Student motivation



**Motivation is what drives students to achieve something.** If students do not find the reason behind an activity and feel disinterested, they will not be engaged and will not be in favourable conditions to learn. Therefore, it is essential to foster student motivation. The literature does not provide a single and universal definition for motivation, probably because what is motivating may vary from one student to the other. However, a series of motivating factors have been identified (Lorenset, 2018).

Usually, a distinction is made between intrinsic and extrinsic motivation.

With **intrinsic motivation**, students are motivated from within and are **strongly involved in learning**. The **interrelation between engagement and intrinsic motivation** seems naturally induced, since the latter results in more involved students.



On the other hand, **extrinsically motivated students** are motivated by outside factors and imperatives (deadlines, clear tasks and instructions, grades...), and tend to put forth the **least amount of struggle** to get the most reward (Harandi, 2015).

In the case of language learning, motivation is seen by some as subject to a combination of effort and willpower as well as positive and favourable conditions. Motivation is also about **interest, fun, engagement and passion** (Lorenset, 2018).

Many researchers have tried to identify motivating factors. Some have decided to study digital games in order to understand motivational aspects. Lorenset (2018), for instance, lists several reasons why digital games in learning are motivating, among others:

- combination of fun and participation;
- living a new life and a new identity virtually;
- goal orientation;
- interaction;
- feedback and narrative;
- autonomy, etc.

However, the most influential work probably comes from Malone (1981), who elaborates a theory of intrinsic motivation based on experimental manipulation of games. He suggests that games are rewarding because of three main factors provided by their very nature: **challenge, fantasy and curiosity**.

To begin with, **challenge** depends on the degree of difficulty in the game and is characterised by four attributes: **goals, uncertain outcome, self-esteem** and **'toys versus tools'** (toys are used for their own sake, tools for a purpose).

Then, **fantasy**, as described by Malone, is the way players can imagine themselves in the game. It can be either intrinsic, where skill and fantasy depend on each other, or extrinsic, where fantasy depends on the skill (Iacovides et al., 2011).

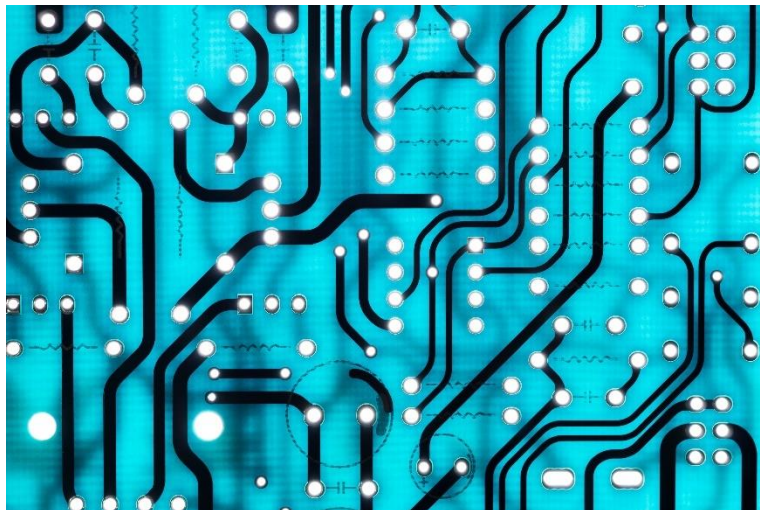
Finally, **curiosity** reflects how players keep playing a game to find out what will happen next (after certain actions are taken). Curiosity can then be subcategorized in **sensory curiosity**, which is activated by sensory aspects (visual of a game, sounds, ...) and **cognitive curiosity**, which occurs with the desire to improve one's knowledge.

Now that we have a better view of what **engagement and motivation** mean in the context of education, it should be clearer why these two concepts are such paramount key factors in learning. ESL students who develop an intrinsic motivation to learn English and are behaviourally, cognitively and emotionally engaged, will be in very favourable conditions to reach an advanced language level and achieve fluency. Ultimately, promoting motivation and engagement is also a question of empowering learners. **With motivation and engagement, students are more involved, they enjoy the learning experience more and are in a good environment to learn how to learn.** Eventually, empowered learners will develop problem-solving skills and they will understand the wide picture more easily (Gee, 2005).

## 2.2. How to support student engagement in a digital environment to enhance language learning

A definite answer to the question “How do I get my students more motivated and engaged?” is next to impossible, because it will vastly depend on your students and their interests.

What research does highlight, though, is that technology and digital environments offer many options to make instruction more interesting to learners (Harandi, 2015).



While technology cannot directly tackle the issue of “overload school schedule” that was the first extrinsic challenge reported by teachers in our survey, since this is a structural issue, it can help address most of the other challenges that were highlighted in Section 1. **Proper use of technology** (including video games) **can help build a better rewarding system**, make learning process more engaging and address the learning difficulties of your students as well. All of these by making it easier to **offer multiple streams of information and interactivity**. Most importantly, technology may **help build up your students’ intrinsic motivation and engagement** (cognitive, emotional and behavioural). The use of video games, for instance, is

definitely an option to investigate for your language activities. This will be explored in more detail in Sections 3 and 4 below.

In this section, we will focus on digital learning methods, techniques and strategies that may appeal to your students, regarding the four productive and receptive language skills as well as vocabulary and grammar learning.

## Speaking

We discussed in Section 1 about the challenging aspects of the speaking skill. One of our observations was that speaking could be hindered by **a lack of self-confidence, nervousness and language anxiety**. These are, by nature, serious barriers to **emotional engagement** in any speaking activity. It is very important that students feel in a safe environment to practice their speaking skills, without feeling pressured by the teacher or their peers. Building a healthy class atmosphere is what every teacher should strive for. However, there are some technological imports that can come to the rescue.

To work on emotional engagement, teachers could, for instance, use technology to offer a means of practising their oral skills in a delayed manner. The idea would be to prepare activities where students could pre-record their voice (and record again if they need to).



This is possible, for instance, with video presentations. You could, for example, ask your student to work in groups and make a video presentation on a topic of their choice (or from several options). By giving them some freedom on the topic, the students have the chance to express their intrinsic motivation (with a topic that interests them). Since they can edit and record things several times for the video presentation, they may feel more comfortable and be more emotionally engaged. Video editing is also a skill that may interest your students and engage them cognitively.

Delayed-speech activities can help students feel more comfortable with speaking, but **they will still need to develop their immediate speaking skills**. Direct speech can be practiced during fun, casual activities. For instance, your students may also feel more comfortable speaking in a digital game context, where they have to communicate together orally to advance in the game, for example.

## Listening

For listening as well, students could feel some anxiety, in part because of the lack of control they may have over the audio material. Giving them the chance to slow down the pace of the audio and to repeat and pause it may help alleviate that stress. Moreover, it may be worth presenting students with videos rather than simple audio files, because it is more stimulating and may help your students focus better on the activity.



## Reading and writing

To engage students, reading and writing activities may benefit from increased interactivity. For instance, students could practice their writing and reading by discussing with a chatbot. Mr. and Mrs. Winston (<https://mrwinstonchatbot.eu/>), for instance, are chatbots designed for English language education with which students can interact.



## Vocabulary and Grammar

Grammar and vocabulary are **two important pillars that students need in order to develop their language skills**. These linguistic tools can also be practised in interactive and engaging ways, with the help of technology. There are, for instance, several learning apps that use gamification to help with these categories, for instance Duolingo. Research indicates, for instance, that **digital games can have a significant positive impact on vocabulary** (Hazar, 2020).

## SLDs and technology to help with motivation and engagement

While your students with SLDs may feel more engaged and motivated with the above suggestions, as other students, their real boost will come from the adaptations that they need and what technology can often offer them. With proper adaptations, students with SLDs can

have an improved learning experience and reach their goals. If you are interested in the subject, we suggest that you take a look at [our practice sheets](#) that cover this topic.





# **SECTION 3**

## **Gamification, a tool for learner engagement in ESL classes**

### **3.1. Gamification and Game Based Learning (GBL): key elements to support engagement**

Today's students are no longer the target the educational system was designed for. Growing up with technology and video games has dramatically changed how they process information and turned them into "digital natives" (Prensky, year, page).

The main reason why an overwhelming part of the new generation plays video games is that they are incredibly engaging. Play has a deeply rooted biological function. It is a way to practice skills in a safe environment, and because it was useful, it was selected by evolution to be rewarding (enjoyable).

Digital game-based learning is more recent, as it was born in the last decade of the 20<sup>th</sup> century. It has made its way as “edutainment” for kids and as a simulation for adults (or serious games) but is still not fully accepted by school representatives who wonder: should learning be fun?

Game-based learning doesn’t deny the effort of having both fun and learning in the same place, with a lot of work invested in learning. But it aims at turning hard work into hard fun. The video game industry defines fun differently than what most people have in mind. It is mostly about having an impact, challenges, and fantasy while trying to master patterns. This is where gaming and education can meet:

“Fun from games arises out of mastery. It arises out of comprehension. It is the act of solving puzzles that makes games fun. In other words, with games, learning is the drug (Koster, 2004, p. 40).

## Definitions

There are a lot of terms that refer to the use of games in education. We define here some of the most important terms to be clear about what we talk about or refer to.



### Game

Games are engaging because their rules give structure and goals. Their interactivity gives feedback on the player’s progression toward these goals. This is great to put the player in the “flow” and to help them learn constantly.

At their core, they are problem-solving activities approached playfully, hidden in a nice emotional narrative, and filled with adrenaline.

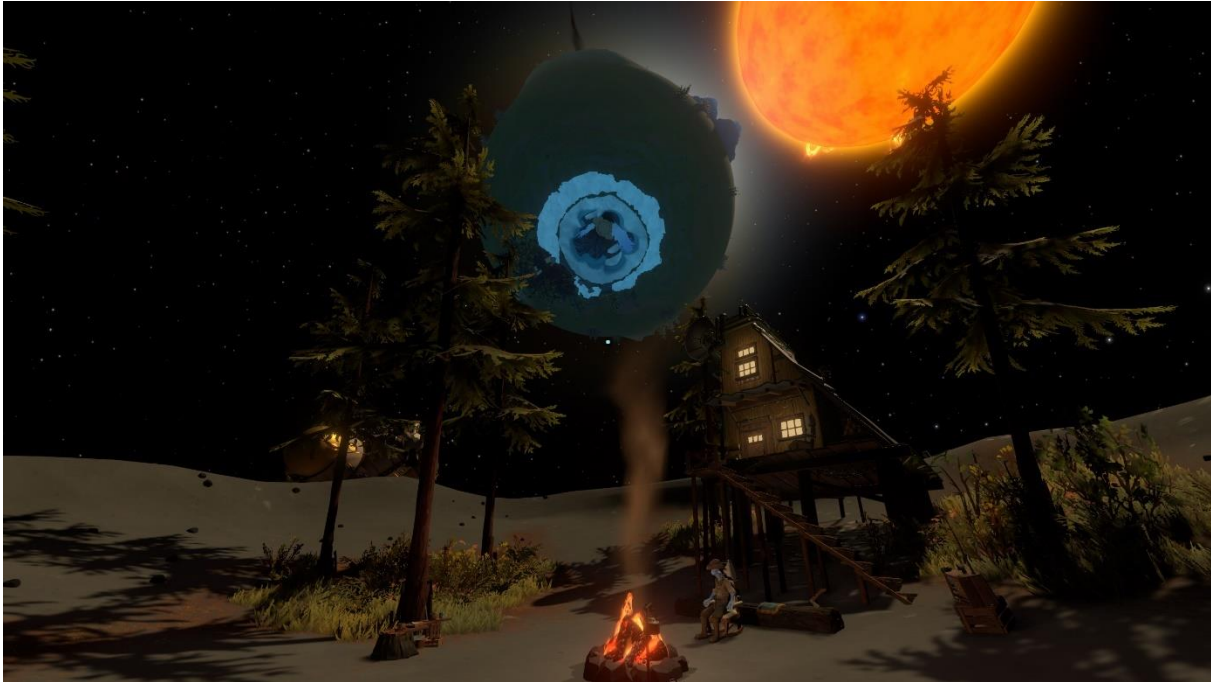


Figure 8. Outer Wilds, a video game about exploring a solar system and roasting marshmallows



### Educational game

Educational games are learning exercises in games' clothing. Just like games, they have rules, players, and game elements but their primary function is to address a learning outcome, while the fun is just a mere additive. For example, crosswords prepared by teachers feel like a graphically advanced learning activity to students.



### Serious Game

Most serious games on the market are targeted at companies that use them to build customer loyalty. They are also used in the military, hospitals, and administration. Their primary aim is to teach a domain process or check a user's knowledge.

Serious games often take the form of simulations or multimedia pieces containing variable graphics or animated rewards for getting puzzles right. They are very far from the experience provided by entertainment games.

For example, [The good, the bad and the accountant](#) is a serious game to learn about corruption in the political area.

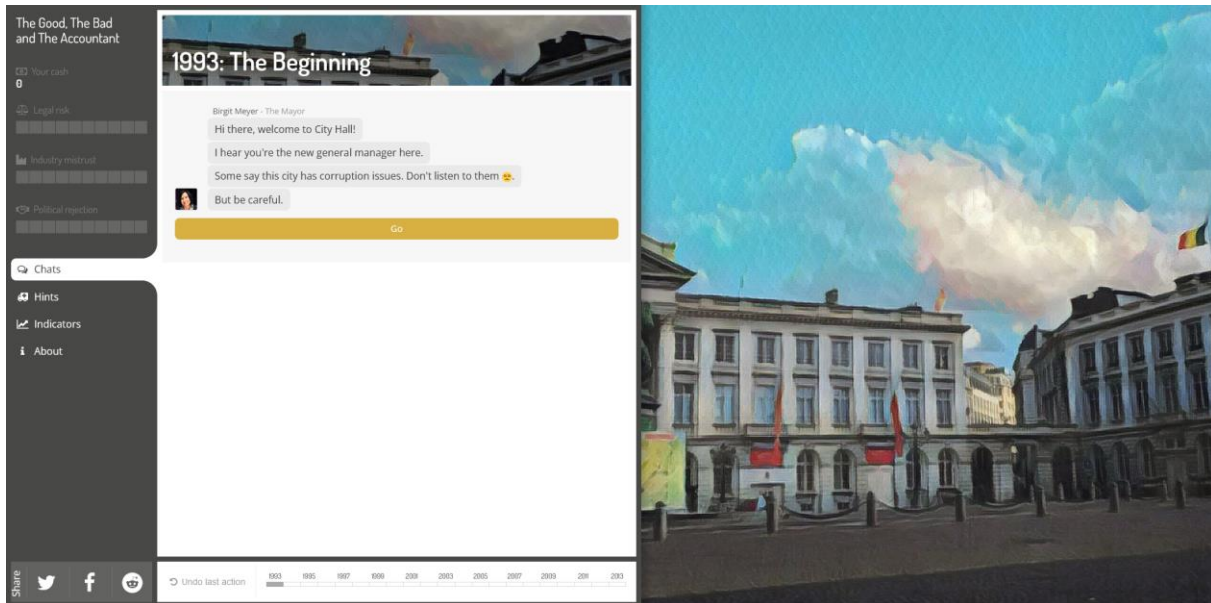


Figure 9. Screenshot from the good the bad and the accountant serious game (Journalism++, 2016)



## Game-informed learning

In game-informed learning, the video game medium is used like any other supporting content. The game can be used as a support to practise learning outcomes (commenting on epic combat using the myths and fables vocabulary) or the learning content is given as a tool for students to better understand the game they are playing (understanding historical metaphors or references inside a game) (Gilson, 2021).



Figure 10. “Teacher and gamer, how I teach using video games” video by Konbini Techno – Youtube (2020)



## Gamification

Despite its name, Gamification is definitely not a game. The aim of gamification is not to provide entertainment but to change behaviours by importing game elements and game design techniques to a non-game environment. It is mostly about providing points, scores, and badges to users for performing certain actions.

Gamification has potential when it helps students feel progressing. It can do it by creating multiple assignment opportunities and by giving feedback. It also shines when it can create fantasy, for example, by having major assignments be a “boss” monster tackled in cooperation.

But sadly, it is mainly misused for the moment, with a focus on surface-level, extrinsic motivators: rewards that are earned for completing a task like leaderboards, experience points, and badges. They often disregard intrinsic motivation: being engaged in an activity because it is enjoyable just to do it. This is because it requires actual interesting game design.

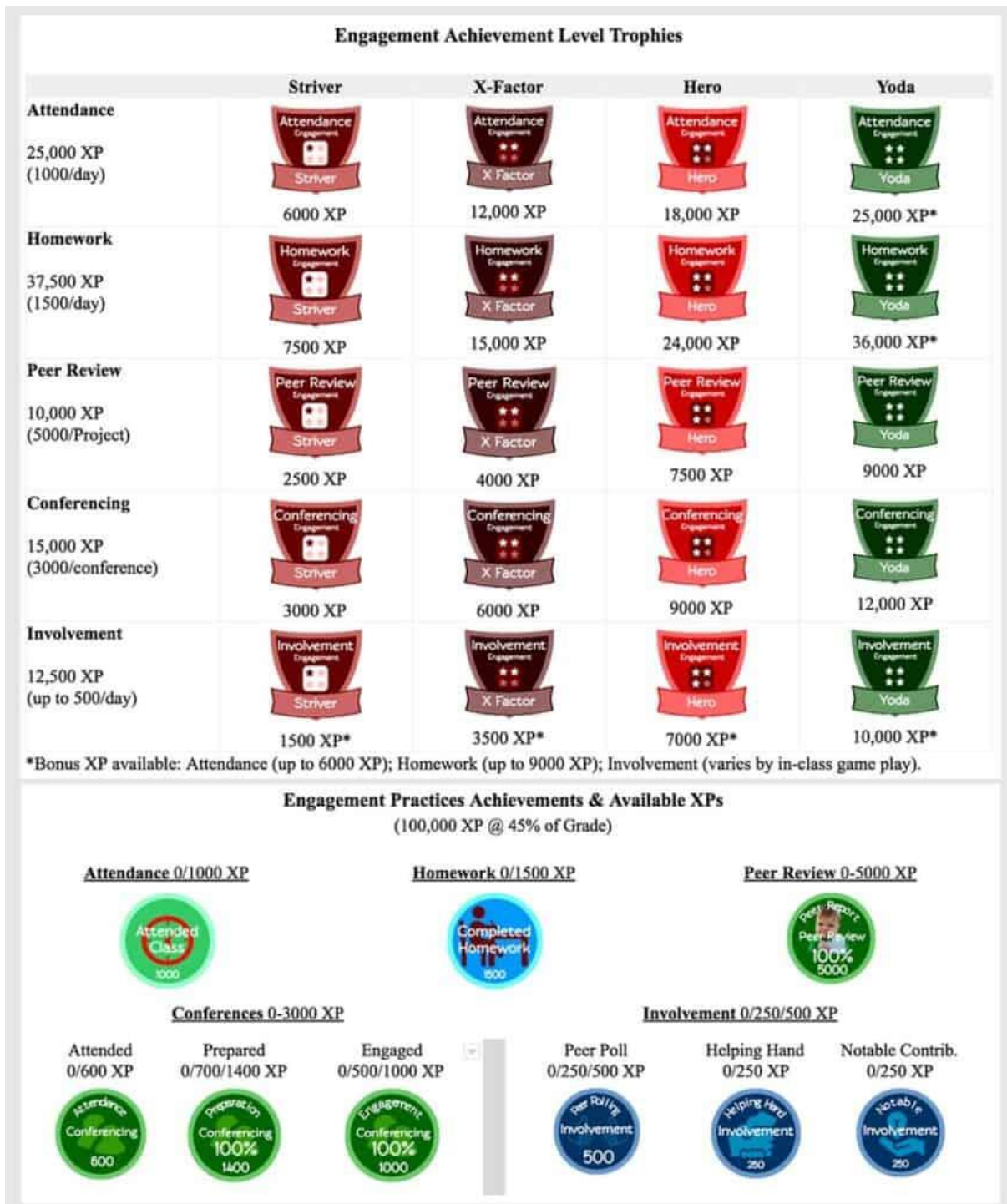


Figure 11. 10 Bad Gamification Examples: Learning from Failed Projects

Written by Ricardo in Gamification. (Source: <https://keepthemengaged.com>)





## Digital game-based learning (DGBL)

Contrary to other forms of educational games that try to sugar-coat learning content with game concepts, DGBL tries to make games that are both enjoyable and educational, by having engaging gameplay that also fosters a learning outcome.

Students need some skills to be able to play and practice them while playing.

Skills are necessary to continue the fun and it is the driving force for learning. For example, children can be induced to practice their reading skills if reading is an indispensable part of a game that features a narrative spanning over a long period of time.



Figure 12. Terra alia, the language learning RPG (30 parralel, 2021). (Source: Steam.com)

## Does DGBL work?

Some examples worked in different fields: spelling and reading, physics, health, biology, mathematics, medicine, and computer science.

Research shows that a well-designed DGBL game can improve learning by 7 to 40 percent (Van Eck, 2015). Some meta-analyses also reported significantly higher cognitive gains in comparison to traditional teaching methods and that learners in game-based instruction performed better in general (one full letter grade).

## Examples

### Arena

The research from Prestopnik (2016) exposes a design case for a story-driven language learning game called Arena.

The game is set in 2410 A.D. and puts the player in the shoes of a young man travelling to the planet Arena, a Spanish colony. He must combat local bandits and wildlife, and learn the local language to find his parents.

The gameplay mixes exploration, puzzle-solving, and action-adventure. Locations feature objects to interact with, using a tool called the Explorer: a technology that helps translate Spanish into English.

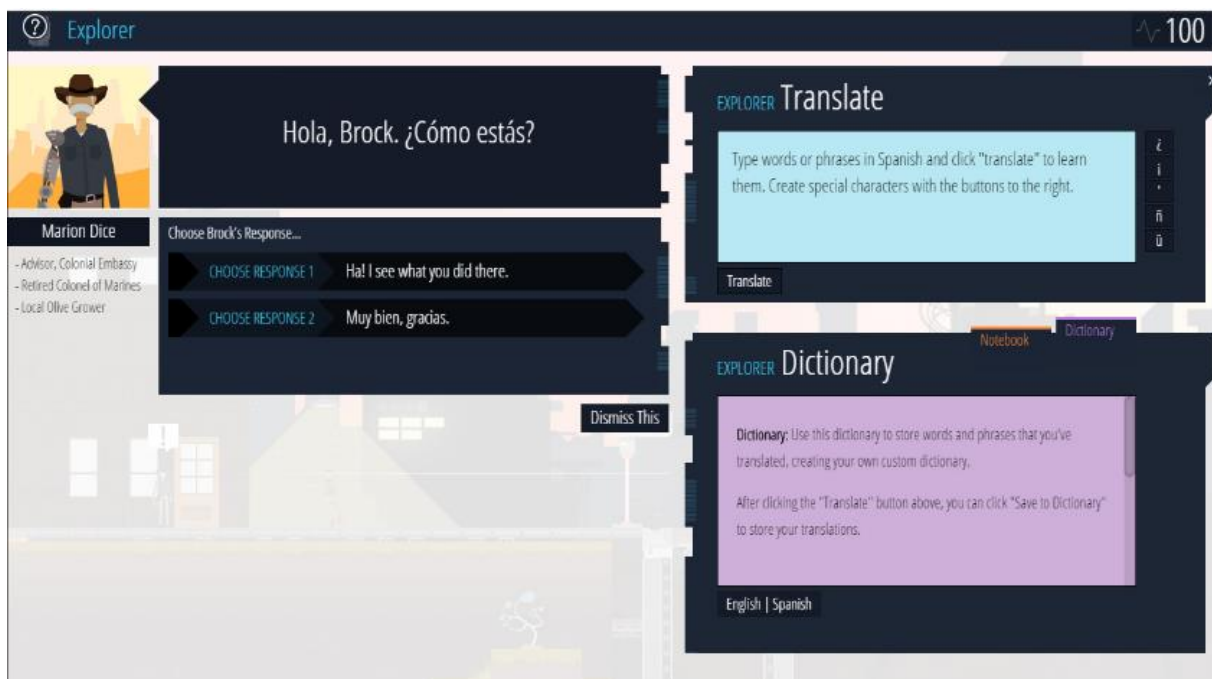






Figure 13. Screenshots from the DGBL game Arena (Prestopnik, 2016)

The game was designed with learning theory principles in mind: Psycholinguistic Second Language Acquisition, Diegesis, Fantasy, and Reinforcement Learning.

Authors learned a few things: telling a compelling story in a language that players do not know is a challenge. Making things too easy can be detrimental: mistakes and struggles are important for learning.

They first designed combat to be a recreational activity in-between language activities, but noticed the poor efficiency of this design. In order to connect play and work, they then had language activities resulting in “loot” drops (weapons, upgrades...). Players who want to upgrade their combat abilities need to engage in conversations.

### Antura and the letters

“Antura and the letters” is a free DGBL game that aims at teaching kids aged 5 to 10 how to write Arabic letters and words (a new version in English is also available). The design approach

is “stealth learning”: the primary school Arabic literacy curriculum is turned into a fun journey. The game can be played on a smartphone using touch input and features 23 minigames.

The player, with the help of Antura, the dog, must watch over wild little creatures called the “Living Letters” throughout several environments. To do so, the player must play several mini-games designed to present a challenge connected to a specific pedagogical goal.

The game is a good example of mechanics that blend learning and game together. For example, in one of its minigames the player must guide a rocket by drawing its trajectory within a racing track that has the shape of the letter to be learned.

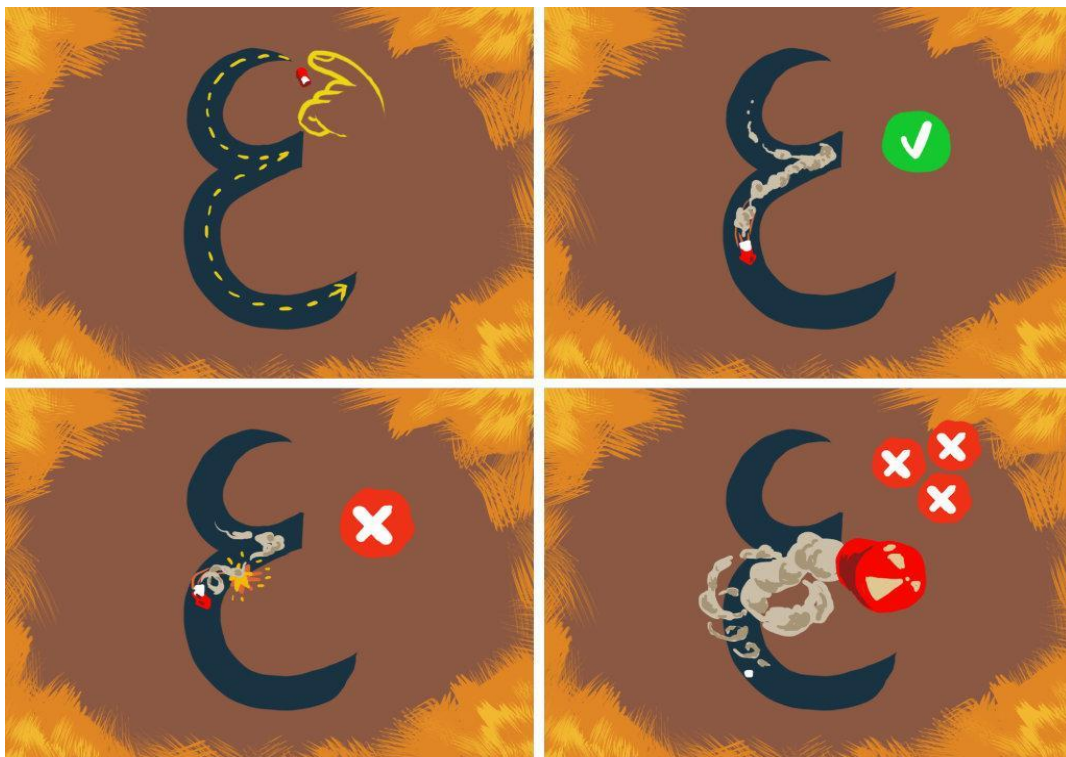


Figure 14. Drawing minigame in Antura and the letters (Video games without borders, 2022).

(Source: <https://docs.antura.org/Minigames/Maze.html>)



Figure 15. Antura and the letters (Video games without borders, 2022). (Source: <https://play.google.com>)

## 3.2. Learning gains from digital games: the motivational and engaging power of gamified learning

### Motivational and engaging power

In a learning process, **motivation** is important because learning requires effort.

The engaging power of games lies in reinforcement learning: the anticipation of rewards and environmental triggering of curiosity release dopamine in the brain. This is sometimes referred to as the “dopamine loop”. The ability to reinvest the rewards gives them endogenous value, which propels players in additional trigger-action-reward-reinvestment cycles. This is what makes levelling up and moving up in games pleasurable (Prestopnik, 2016).

It explains why the core of engagement is based on challenge and progression. Goal-driven mastery is intrinsically motivated as opposed to a learning only driven by grades.

Games' interactivity allows learners to feel like active agents instead of passive recipients.

Fantasy is also important, as players want to feel a new world, live a new life, unravel mysteries, and enjoy the surprise.

If you are concerned with over-engagement and addiction, we talk about it in section 4.1.

With regard to **engagement**, Finn and Zimmer (2012) identified several types of engagement, which need to be balanced for successful learning: academic, affective, cognitive and social. Engagement plays, therefore, a major part in students' life in general, especially when they learn with direct stimuli from educational game-based resources.

## **Benefits for self-esteem and anxiety**

To be successful, language learning requires regular practice and immersion which are influenced by three critical factors: motivation, self-efficacy, and low anxiety (Martin, 2017).

Self-efficacy refers to one's belief or expectation in successfully completing some tasks or achieving some specific objectives (Bandura, 1988). If a student's self-efficacy is low, they might experience anxiety and fatalism in front of a task, which hinders motivation and learning.

Good news, it seems that DGBL can help increase students' self-efficacy and reduce anxiety. It was shown in a study interested in one of the worst feared subjects: mathematics! (Hung, 2014).

## **Examples of learning gains: grammar, vocabulary, sentence construction, together with the basic skills**

A study reviewed 15 other studies interested in the use of language games in enhancing ESL learners' sentence construction. Muhanna (2012) tested the use of online games to teach

vocabulary, and Hashim (2019) tested the impact of game-based approaches on grammar with Socrative, PowerPoint Challenge Game, and Kahoot. The groups that used DGBL showed statistically significant better results, higher motivation, and fun.

Moreover, playing educational video games in the classroom in order to enhance English (ESL or EFL) in a controlled environment will engage the students in order to develop their basic skills: reading, speaking, listening and writing.

Other gains from digital games refer, in support of learning achievements, to critical and higher order thinking skills, improving retention, instant feedback with regard to students' activity and progress, fosters collaborative actions. Did we mention motor skills?

## 3.3. Organise, then press play and start the game!

### The bad methods of gamification

A teacher experienced a semi-failure while trying to implement gamification in his classroom. It is very sad because he invested a lot of efforts and maybe a few things could have made it great. It was reported in an article for the journal of interactive technology and pedagogy (Cripps, M.J, 2019). It shines a light on the fact that including game elements doesn't necessarily make an experience fun. Usually, only adding points, leaderboards, or badges as a method of gamification is a bad idea.

He tried to replace traditional grades with experience points (XP) that would be awarded for showing up on time, finishing homework, or simply attending a class. With more XP, students unlocked badges and a leaderboard kept track of everyone's achievements.

The good idea was to map XP to a grade, which created a bit of impact. Impact is a pillar of fun. And it worked for some students at the margin (15%) who enjoyed it. But maybe the impact wasn't felt enough.

The mistake is that no real motivation was inserted into the students' study cycle. The awarded points had no values other than gaining a badge that had no intrinsic value. Plus, some points were given for tasks that are mandatory and not very intrinsically satisfying (showing up), which reduces the perceived value of the XP. Another thing to consider is that relying only on external rewards can trigger the "undermining effect" which actually reduces intrinsic motivation.

Concerning leaderboards, they can also have backfire effects. For example, offering a prize for whoever finishes at the top should in theory encourage everyone to work hard. The problem is those good students find themselves at the top all the time. The middle or lower students, those who would actually benefit from the leaderboard, see that the competition is too good to even try.

## **Efficient methods and didactic strategies**

When trying to implement game-based approaches, one can consider intrinsic and extrinsic approaches (or a mix of both).

In the "extrinsic" approach, in which the "serious" and "playful" dimensions are separated, we alternate phases of play with phases of learning. The game is then used as a "reward" for understanding the serious content.

The "intrinsic" approach aims to mix the "serious" and "playful" dimensions so that it is no longer possible to separate them. We seek to integrate serious content within the game mechanics. The success of the game lies therefore in the understanding of the serious content.

Research seems to point out that the intrinsic approach is the most valuable. However, the extrinsic approach can also yield benefits if serious and playful gameplays are linked together.

## **Different uses of DGBL inside and outside the classroom**

While learning can happen with DGBL, consolidating knowledge is still the responsibility of the teacher: students can't do it alone.

DGBL can be used for:

- **Intervention:** help a student overcome their weak spots at their own pace.
- **Enrichment:** present learning content in different forms to students
- **Reinforcement:** have students review and practice some newly learned content. This can be done in groups or multiplayer, using scores to motivate increased mastery.

In order to practice these points, several organisations can be put in place.

While games can be multiplayer or single-player it doesn't mean one student per game necessarily.

- You can play a game in front of your class (spectator position) and ask them to participate while you or another student inputs the answers in the game.
- You can have one or 2 – 3 students in front of a single-player game. Sometimes, debating and thinking together in front of a game is beneficial even for single-player games. Typically, in games reasoning or choices have to be made without time pressure.
- Multiplayer games usually require a player per controller. But sometimes party games can propose different organisations (one versus all etc).
- You can always have a turning system where a group of students plays while others analyse the ones that are playing. After a defined game time, you swap the groups. It can be useful if you want students to have a reflexive approach, to discuss their strategies and how to improve themselves in front of a challenge.

Another thing to consider is where you will use the games, in the classroom? As homework? As remote work? Using modern applications like [Discord's screen share](#) or [Steam's remote play together feature](#), you can play with your students remotely or watch them play.

Some games can be used in the classroom like any other medium. But you can also ask your students to play a single or multiplayer game at home as homework, solo or in a group, maybe with a score or progression goal or asking them to write an essay about what they learned in the game.



# **SECTION 4**

## **Click and collect the benefits!**

### **4.1. The benefits of gamification and GBL for language learners inside the classroom**

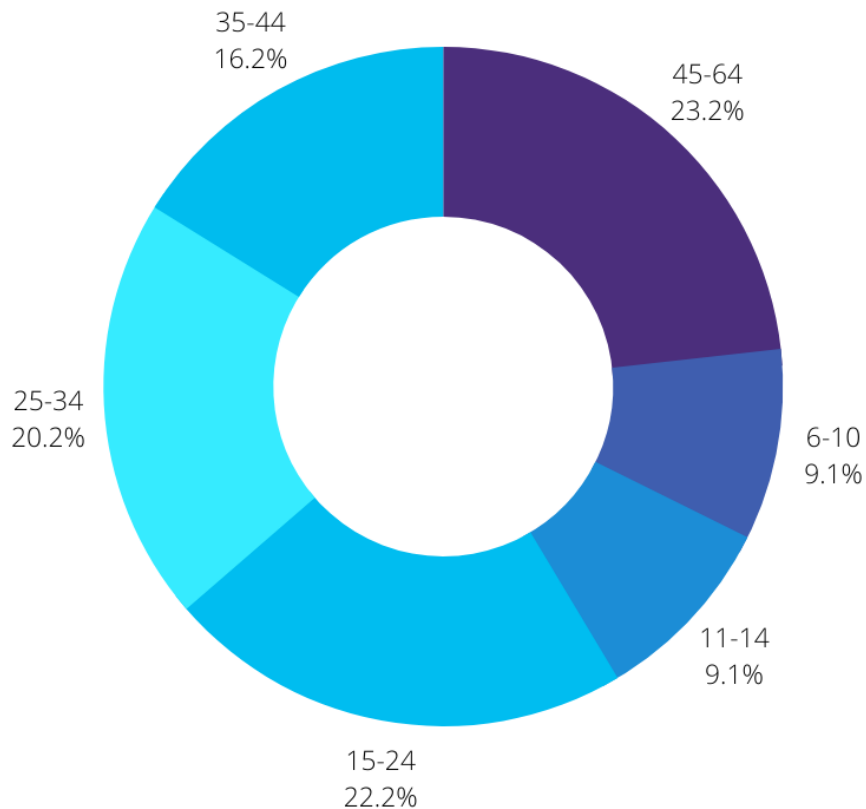
#### **Debunking myths about the negative impact of gamification and GBL as language learning techniques**

##### **For children only**

Adults enjoy video games as much as children. The average age of a video game player in Europe is 31.3 years old (ISFE, 2021).

In Europe, in 2021, the gaming audience breaks down as follows:





## Addiction

“Video game addiction” has been a heated debate between experts since 2018, when the World Health Organization (WHO) added it to its diagnostics manual.

The problem with “gaming disorder” is that an entirely new and specific disorder was created only for video games, while any pleasurable habit can become pathological. It requires a psycho-social terrain, videogames won’t turn a mentally healthy kid into an addict.

Detection of a problematic video game consumption is not only about measuring the number of hours spent playing. Other factors are important: the inability to control the frequency, intensity and duration are also determining factors. Another factor is the impact of gaming on family, social, educational or professional activities, provided that it has been going on for at least a year.

For teenagers, a drop in school results will be visible, and for adults, professional difficulties will appear. In addition, there is a poor diet, poor sleep, anxiety, aggressiveness and sadness.

## DGBL wants to replace teachers

DGBL will not replace teachers because it is just another tool for them to use, like any other media.

A [meta-analysis on the cognitive and motivational effects of serious games](#) from the Eindhoven University of Technology on 39 studies ranging from 16 to 1105 participants found that the greatest gains occur when teachers surround the gaming experience with additional supporting content.

A great way to ignite motivation in students is the teacher's passion. Mixing it with young peoples' enthusiasm about games is a win-win!

Students build self-development and self-confidence with digital games.

## Real-time feed-back, multimodal perspective over the whole instructional moment, and visualized progress helps students see self-development

**Real-time feedback** is essential in learning; it provides insights in terms of achieving learning goals and permits self-monitoring and improvement

However, giving feedback can be challenging for a teacher with many students.

A meta-analysis of studies reveals that 65.07% of them demonstrate that automatic feedback increases student performance in activities. Another study showed that DGBL without feedback performed less than traditional teaching. But DGBL supplemented with feedback resulted in deep learning.

## Low-risk competition and cooperation

One key to player retention (engagement) is intrinsic reward. If an activity is intrinsically rewarding, we are more prompt to continue to do it.

According to the Self-Determination Theory, the more intrinsically rewarding activities are those that satisfy 3 psychological needs:

- **Competence:** sense of progression, sense of being in control.
- **Autonomy:** sense of volition, having meaningful choices, being able to express yourself.
- **Relatedness:** sense of meaningful social relationships, either through cooperation or competition.

Competition and cooperation are important because they are the foundation for relatedness, one critical component for intrinsic rewards. But they are also linked to an important component of fun: impact. We like to impact our environment or others; we like to feel working for something bigger than ourselves.

## Student-centered learning

As far as learning with games, student-centered learning (SCL) promotes:

- **active learning:** having learners engage and interact with the material to go beyond simply cognitive process;
- **deep learning:** connect learning to concepts, characters and experiences, rather than isolating and presenting it for its own sake;
- **autonomy and responsibility:** teachers become facilitators of the students seeking knowledge and developing their skills on their own;
- **mutual respect and interdependence** between teacher and student;
- **reflexive approach:** help the student and teacher understand how they learn to build on that.

This approach has been tested and shown to benefit student motivation and independence. Its components can be found in good games and game design theory.

## 4.2. The benefits of gamification and GBL for language learners outside the classroom

### Hard (educational) and soft (interpersonal) skills

Playing in general is good for cognitive and social development, it teaches cause and effect, long term versus short term gains, order from seeming chaos, and complex systems behaviour.

Many DGBL experts now believe that digital games promote the “21st-century skills”:

- Action games enhance visual attention
- 3D puzzles improve spatial ability
- games have positive effects on cognitive skills.
- Parallel processing, multitasking, incorporating peripheral information
- Prosocial games foster prosocial behaviour
- cooperative or team-based games teach cooperation and communication.

These skills are required to succeed in a game: controlling both the character and camera, avoiding enemies, planning your next action, all this at once.

Some scholars argue that because they push players to retry and get better, games might help develop a “growth” mindset (I can get better if I work) and encourage perseverance.

During the Covid period, it was found that playing comforting games like **Animal Crossing** was associated with affective well-being.

What happens outside the game also teaches: understanding and thinking about the rules of the game is a process called metagaming and sometimes it is more enjoyable than the games

themselves. Some players create wiki pages to share the best strategies to beat or make the game better, which can then translate to coding your own adaptations of the game.

But the art and culture put in the games are also a matter of study. Making players think about games as a form of expression that reflects and interprets the culture, ideas, and fantasies of their maker is a gateway to art analysis.

Games also convey meaning through gameplay, a subtext that teaches players to think about and make moral decisions.



# Conclusion

With many challenges and barriers surrounding English learners, promoting engagement and motivation is essential. ESL students need to be engaged with the learning material if they hope to master the language. Gamification and game-based learning are very effective methods that teachers can use to reach that goal. You will find more resources to help you use these strategies in viable ways on our website <http://d-esl.eu/index.php/en/resources/>.

To conclude, in Section 1, we covered the challenges the ESL students may face, including for learners with SLDs. We then continued with the exploration of how these challenges could be overcome by increasing student motivation and engagement, and described these two concepts in more depth in Section 2. Section 3 discussed gamification and game-based learning and Section 4 the benefits inside and outside the classroom that they bring.

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## Co-funded by the European Union

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

**Project code:** 2021-1-BE01-KA220-SCH-000027783

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