RE@D - Revista de Educação a Distância e eLearning
Volume 7, Número 1
2024

Breakthroughs and pitfalls of using digital technologies in the LSP classroom: an empirical study

Progressos e desafios na utilização de tecnologias digitais nas aulas de LFE: um estudo empírico

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Abstract. The integration of digital technologies in language for specific purposes classrooms has become a prominent area of research and practice. This integration has brought about several breakthroughs but also some associated pitfalls. We provide an overview of the introduction of digital technologies in education, taking into consideration that one of the fundamental aims of the United Nations' sustainable development 2030 agenda is quality education, namely ensuring inclusive and equitable quality education for all. We discuss the challenges posed by digital distraction, given that instructors have to compete with social media and other distractions when students are asked to use their mobile devices in class. We look at different types of digital learning technologies and how they can facilitate the teaching-learning process in order to make the most of these technologies in the classroom. The findings of the study we conducted have allowed us to realise that not only do students use digital technologies in a learning environment autonomously, but they also expect their instructors to include them in the preparation of their courses. Digital technologies should be adapted to the needs and expectations of the students and respond effectively to their objectives and the competences they have to develop.

Keywords: Languages for Specific Purposes, digital technologies, classroom activities, student engagement, gamification.

Resumo. A integração de tecnologias digitais nas aulas de línguas para fins específicos tornou-se uma área relevante da investigação e da prática. Esta integração desencadeou vários progressos, mas tem também alguns desafios associados. Este artigo apresenta uma síntese da utilização de tecnologias digitais na educação, tendo em conta que um dos objetivos fundamentais da Agenda 2030 das Nações Unidas para o desenvolvimento sustentável é a educação de qualidade, garantindo, concretamente, uma educação de qualidade inclusiva e equitativa para todos. Discutem-se os desafios resultantes da distração digital, considerando que os professores têm de competir com as redes sociais e outras distrações quando os alunos são convidados a utilizar os seus dispositivos móveis nas aulas. Analisam-se os diferentes tipos de tecnologias de aprendizagem digital e a maneira como podem facilitar o processo de ensino-aprendizagem de modo a tirar o

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máximo partido destas tecnologias na sala de aula. As conclusões do estudo que realizámos permitem perceber que os alunos não só utilizam as tecnologias digitais num ambiente de aprendizagem de forma autónoma, mas também esperam que os seus professores os incluam na preparação das suas aulas. As tecnologias digitais devem ser adaptadas às necessidades e expetativas dos alunos e responder eficazmente aos seus objetivos e às competências que têm de desenvolver.

Palavras-chave: Línguas para Fins Específicos, tecnologias digitais, atividades em sala de aula, envolvimento dos alunos, gamificação.

1. Introduction

The integration of digital technologies in language for specific purposes (LSP) classrooms has become a prominent area of research and practice in recent years. This integration has brought about several breakthroughs, such as enhanced engagement and motivation among learners, access to authentic materials and resources, and opportunities for collaborative learning. However, when choosing to integrate digital technologies, practitioners should also be aware of the associated pitfalls, which may include technical issues and difficulties in navigating various digital tools, distractions and the potential for off-task behaviour, the need for teacher training and support in effectively integrating digital technologies, and the challenge of ensuring equitable access to technology for all students.

In line with Battershill and Ross (2022), we believe there are advantages to using digital resources instead of paper anthologies or even textbooks when it comes to colour and the possibilities of interacting with the materials. However, we also feel that some students prefer to have paper versions, and we have strived to find a balance between sourced out and printed material and online activities with material spontaneously found on the Internet and used in the classroom.

The main focus of this paper is the description of our experience with concrete activities that resort to digital technologies and how students react to them. After an overview of the introduction of digital technologies in the ESP classroom in the next section, we briefly discuss the most widely spread types of classroom technology in section 3 and the dangers of digital distraction, before we dive into how to make the most of digital technologies in the LSP classroom. In section 5, we describe our empirical study, based on the work performed with different groups studying Business English and Spanish for Business, and present the results of a survey carried out at the onset of the 2023/2024 school year regarding the perception that students have of the usage of digital technologies in the classroom. In the end, we present some final notes and briefly outline what we intend to do next.

2. Understanding the integration of digital technology in LSP classrooms

One of the fundamental aims of the United Nations' sustainable development 2030 agenda is quality education, namely ensuring inclusive and equitable quality education for all. Digital technologies are an essential tool to achieve this goal by making a paradigm shift across the education system (Haleem, Javaid, Qadri & Suvman, 2022). The digitisation of higher education had been happening for some time, when it was considerably boosted by the COVID-19 pandemic, particularly in environments where it was not such a pressing necessity – in urban areas in developed countries since students already had fairly easy access to education, the need to take advantage of digital and online methods was not felt with much intensity. However, in rural areas in developing countries, the shortage of instructors and consequent highly disproportionate student-instructor ratio, coupled with archaic methods and inadequate teaching materials, the challenges had been much higher from before the pandemic. In these situations, the digitisation of education has played a fundamental role in addressing these concerns by providing instructors and students with multimedia tools that are more engaging and contributing to solving the problem of instructor shortage since a single instructor can deliver information remotely across the country (Kaur, 2019) with the possibility of reaching the most remote places (albeit provided there is a good Internet connection).

Generically speaking, i.e., regardless of geography or level of education, the integration of digital technologies in the classroom has a series of advantages that have become clearer in the past few years as more and more instructors make the move from analogue to digital – if not totally, at least in part. As long as the learners have access to the required technological means (usually a computer or other device and Internet access), digital materials are easily accessible anywhere, anytime at the students' own pace. Given that these materials are paperless, they are also environmentally friendly and cost-efficient – the instructor can easily tailor the materials to the group they will be working with without the time-consuming process and paper consumption issue resulting from endless photocopies. Learners, on the other hand, can store, organise, and keep the materials with them at all times in a resource effective manner.

Digital materials, however, are not without disadvantages: from the high cost of up-to-date technology to the demands on instructors, who are not all equally equipped, trained, and able to deal with this technology, much work has to be done to implement the move from analogue to digital or simply to incorporate digital materials in the LSP classroom. Students may also face some challenges, ranging from the need to learn how to evaluate a website and decide whether it is trustworthy to resisting the temptation to simply copy and paste information because it is so easy. When we factor in artificial intelligence and automatic translation, there is an additional drawback in the LSP classroom – assignments can be easily made using AI-powered apps so instructors face additional challenges to ensure academic integrity.

3. The dangers of digital distraction

Today's university-aged students are avid recreational users of mobile technology. University students spend several hours on their mobile phones, send hundreds of text messages, and log several hours on X (former Twitter), Facebook, and other social media platforms every day (Flanigan & Babchuk, 2022). However, leisure use of mobile technology does not end once students enter the classroom: a phenomenon commonly referred to as 'digital distraction'. Students frequently use mobile phones and laptops for off-task purposes during class, which hinders learning. 'According to the techno-optimist narrative, technology has created a new generation of multitasking students' (Aagaard, 2017, p. 6). But is this really true? Aagaard made a qualitative exploration of media multitasking and found out that 'the popular image of educational technology as a benevolent force fails to recognize the messy realities of students' everyday engagements with digital devices' (ibidem, p. 85). It is unreasonable to believe that each and every student in a class with an open laptop or holding a mobile phone is going to be focused on the activity suggested by the instructor. The fact is that the human brain, the most complex system in the known universe, is highly susceptible to interference (Gazzaley & Rosen, 2016), and hence distraction.

Putting it simply, whether technology is allowed in the classroom depends on what is being done. In a classroom environment, students should be engaged in multiple forms of learning. Lectures expose them to new information and ideas; discussions and group work help them realise how ideas connect to the world beyond the classroom; writing assignments, making oral presentations to their peers and solving problems allow them to practice skills that will be necessary later in life but also in exams and testing in general (Lang, 2020). It is all about context and about making technology meaningful and engaging inside the classroom.

4. Types of classroom technology

Education technology allows the instructor to interact with students in and out of the classroom. Millennials and following generations are digital natives. They have grown up surrounded by technology in the form of computers and digital devices and immersed in social media. Digital technologies, therefore, are not foreign to them. Additionally, the variety of types of technology tools makes it possible to cater to almost every need – from smartphones and tablets, to laptops, desktops and smartboards, there is a wide range of devices that can be used both inside the classroom and as an extension to it. The possibilities are endless.

Digital learning technologies streamline the student's access to different forms of learning software that range from video streaming platforms and podcasts to gamification, shaping what is termed 'EdTech', or Educational Technology, i.e., using Information and Communication Technologies in learning environments. In a recent study, Costa, Silva, Espuny, Rocha & Oliveira (2022, p. 14) have found that 'the proper

use of EdTech can provide benefits for education, contributing to improving the teaching-learning process and access to quality education'.

Digital technologies can be used in face-to-face, distance learning and blended learning environments. Here are some examples of technology tools that are currently used in LSP classrooms in the higher education context (TopHat, 2021).

Learning Management Systems (LMS)

Learning management systems is a catch-all term used for hundreds of software platforms designed to facilitate the administration, distribution and tracking of courses, homework assignments, tests or other activities. It can be a cost-effective way of conveying information to a large number of students, allowing the instructor to track their learning progress. E.g., Blackboard Learn, Canvas LMS, Google Classroom, Moodle.

Student Response Systems (SRS)

A student response system is an instructional technology that rapidly collects answers from every student, actively involving students in class. They can be used in face-to-face classes, where the instructor can solicit responses to questions or polls in real-time. E.g., Kahoot, Mentimeter, Poll Everywhere, Socrative.

Virtual Classrooms

A virtual classroom is an online environment designed to mimic in-person training, focusing on real-time education with synchronous audio, video, and screen sharing. It allows instructors and students to communicate, interact, and collaborate offering videoconferencing tools where instructors and students engage with each other. E.g, BigBlueButton, Google Classroom, Microsoft Teams, Zoom.

Remote proctoring software

Remote proctoring is a method of monitoring student behaviour during tests and exams in real-time, helping to ensure academic integrity. Several types of mechanisms can be used, including video-based, image-based, and audio-based software. E.g., Honorlock, Proctor360, Proctorio, TestInvite.

Digital courseware

Digital courseware refers to digital educational material, such as textbooks, lessons, assessments, homework, quizzes, and other activities, delivered in an electronic format and intended for use in the course of study, creating engaging experiences.

5. How to make the most of digital technologies in the LSP classroom?

Technology is an inescapable element of any LSP course in higher education. Regardless of whether they are delivering a course that is fully online, blended learning or fully in person, instructors now rely on technology and are expected to do so – both by their peers and by students. At the beginning of the millennium, many LSP instructors were still using transparencies in class, these were replaced by PowerPoint slides and are now being replaced by more attractive presentations, made with Prezi, Canva or other such software. The LSP instructor in higher education is a chameleon that has to adapt to their environment. Due to the 'specific' element in 'languages for specific purposes', the usual scenario implies teaching a language course in an undergraduate or graduate degree that has nothing to do with languages, such as teaching English for Accounting, Law, or Engineering students. This makes the instructors' task all the more difficult because they have to keep on reinventing themselves and ensuring they will attract the attention of students whose minds are wired for something that is totally different.

TopHat (2021) gathered what five educators had to say on the most effective ways to use technology, and came up with five good tips that were tested and tried, and can be implemented in the LSP classroom:

- Use frequent polls and quizzes to maintain engagement
- Use a flipped classroom model and let students learn at their own pace
- Use anonymous discussions to give every student a voice
- Use an interactive textbook to keep students engaged in and out of class
- Use auto-graded assessments to eliminate grading time and give students instant feedback

These suggestions can be adapted to the LSP classroom in a higher education setting leading to greater student engagement. We have used these ideas, and others, with our groups of Business English and Spanish for Business undergraduate students and have had some impressive results in terms of student engagement and participation. Below we briefly describe a few of these experiments.

Intercultural communication in a business setting

In a group of Erasmus students from twelve countries, we have taken advantage of the inherent intercultural nature of the group to design a series of activities that intend to foster awareness to multiculturalism focusing on intercultural communication in a business setting. Using Moodle, the learning management system provided by the higher education institution where we work, we had students complete a number of activities that were designed to make them think and discuss the importance of intercultural communication in a business setting, such as building wordclouds with intercultural-related terminology, posting their view on stereotypes after discussing the topic in small groups and providing feedback to each other, watching a video clip to stem the discussion on the importance of the cultural significance of gestures and symbols.

Turning learning into a game

There are many advantages to gamifying language learning. We have been using Kahoot! in class for some time, both as a way to test vocabulary knowledge (e.g., before a written test to help students revise) and as feedback to group presentations – at the end of each group presentation the members of the group are required to include some sort of activity that engages their classmates and tests whether they actually heard the presentation. Most students end up preparing a Kahoot! quiz about the topic they presented for their classmates to answer showing they have been paying attention. It is usually a very animated moment in class, particularly because Kahoot! displays the ranking at the end of each round and everyone wants to be in the podium at the end.

Using interactive animated content

These three options of software applications that allow for the creation of interactive content are a step further in ensuring student-engagement in the LSP classroom.

- *Genially* is a commercial software that has a free version that offers less functionalities. It is an all-in-one online tool designed to create presentations, interactive images, infographics, gamification, quizzes, breakouts, portfolios, and more, with the added advantage of enabling the inclusion of interactivity and animation effects.
- *Videoant* was developed at the University of Minnesota and it is a collaborative video annotation tool that allows for annotating along the timeline of a video. It has the added advantage of being an open source application.
- Hypotes.is, another open source application, is used to annotate online web pages, text or any other web accessible content, allowing for instructor and students to have conversations on the margins of digital texts.

6. Empirical study

Having worked with digital technologies for some time, particularly during and after the COVID-19 pandemic, we thought we should take stock and assess whether our EdTech strategy was actually working. The aim of our study was to understand whether the changes that we had implemented in the teaching-learning process were duly responding to our students' needs and contributing to the design of teaching-learning environments that would meet the needs of our students. More precisely, we thought it would be beneficial to survey our students so as to shed light on certain issues and fully grasp their perception in terms of the use their instructors make of Information and Communication Technology (ICT), when they use the materials, which resources they prefer, or whether these technologies are available to all students.

The survey (Annex 1) was carried out among the students taking Spanish for Business and Business English at the Lisbon Accounting and Business School (ISCAL) in the first semester of the 2023-2024 academic year. Participation was voluntary with a response

rate of 32 students out of the 57 students enrolled in the subject Spanish for Business II. As far as the subject Business English is concerned, 118 students out of 268 students enrolled completed the survey. The students taking Spanish for Business II are enrolled in the undergraduate degree of International Trade and Business, and those taking Business English are enrolled in the undergraduate degree in Accounting and Administration or Business Management.

We used Google Forms to create an online survey that was made available from 3 to 20 November 2023. The link to the survey was posted to the Moodle page of the different groups. We decided to have the questions written in Portuguese (instead of in English for some groups and in Spanish for others) to eliminate any differences between the various LSP groups and to make sure the foreign language mastery would have no influence on the rate of responses or even in terms of understanding the questions being asked.

Some instructors managed to reserve ten minutes in class for the students to click on the link and answer the survey, while others simply told the students to look up the link on Moodle and answer the survey at home. This probably accounts for the overall 48 per cent rate of responses, which could be much higher if all students had been given the time in class and asked to complete the survey then, and it is something we intend to change in the future.

After the end date for the survey, the students' responses were exported from Google Forms to an Excel spreadsheet. The data collected was organised and the most appropriate type of graph was selected to show the results obtained. All the figures presented below were generated using this methodology.

This sort of survey provides important information regarding the perception students have of the different aspects of the learning ecosystem designed by their instructors. Although the survey focuses more on matters relating with the use of ICT to support the teaching-learning process, we must emphasise that the use of these technologies is only effective when properly framed within the methodology and learning ecosystem adopted in the given course unit.

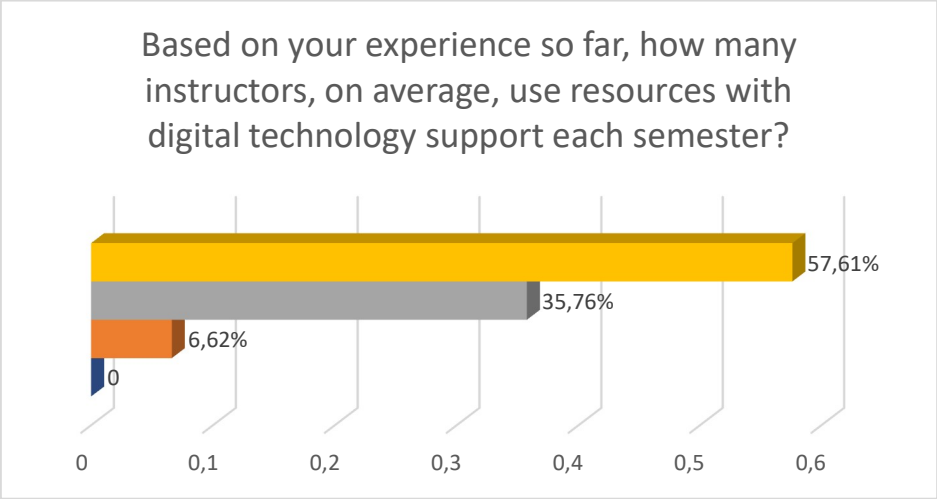
The survey started with two demographic questions (gender and age) and a question on housing. Gender and age did not seem significant at this stage and therefore we did not treat those data. The question on housing was intended to find out the conditions in which the students may work on assignments made at home that imply the usage of digital technologies. The options were: with the family, in an apartment shared with other students, in a student residence, or in their own home. Although we believe the answers to this question may provide interesting insights, we decided not to treat these data for the time being.

In the following sections, we will analyse the answers provided by the students to the remaining six questions of the survey.

6.1. Number of teaching staff who use digital resources

With the question 'Based on your experience so far, how many instructors, on average, use resources with digital technology support each semester?' (Fig. 1), we wanted to learn how many instructors actually use digital technologies in their classes, considering the whole universe of teaching staff the students come into contact with. None of the groups that answered the survey was composed of first year students, so they had already some experience to draw from.

Figure 1. *Based on your experience so far, how many instructors, on average, use resources with digital technology support each semester?*

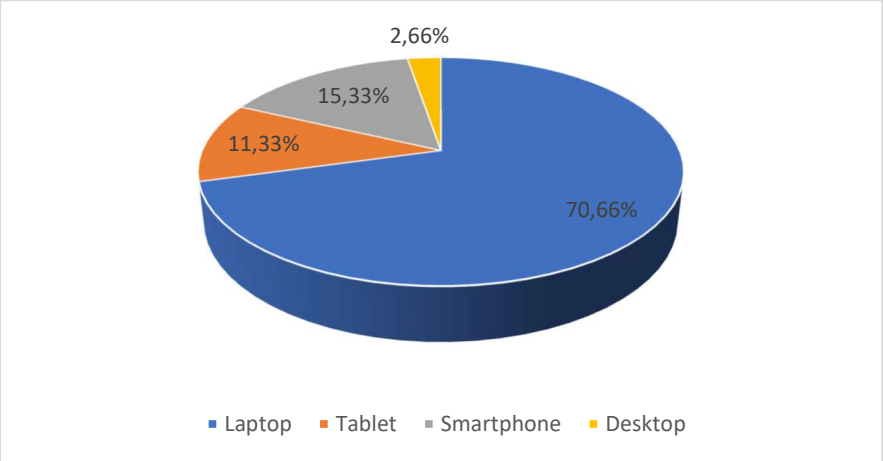


We found that there are at least one or two instructors who use digital resources each semester: 57.61 per cent of respondents say that 5 to 6 instructors use digital technologies in the teaching process and 35.76 per cent identify 3 to 4 instructors who also do so. It is our understanding that, according to the students surveyed, the use of technology among ISCAL teaching staff is quite prevalent, which can be both a sign of the times and an inheritance from the recent pandemic.

6.2. Means of access to digital resources and activities

We asked the students 'How do you access the resources or comply with the proposed activities that involve accessing (require using) digital technologies?', allowing them to choose from the most common devices: desktop computer, laptop, smartphone, and tablet (Fig. 2.).

Figure 2. *How do you access the resources or comply with the proposed activities that involve accessing (require using) digital technologies?*

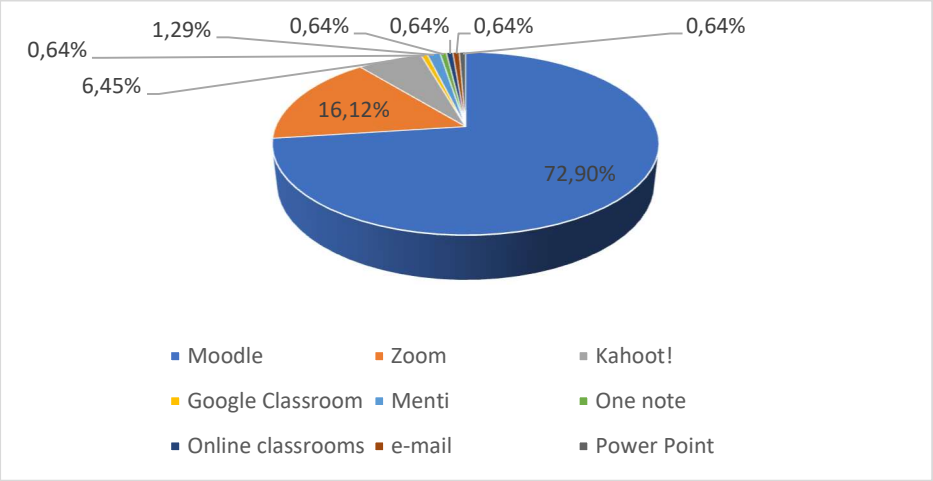


The pie chart illustrates the combined replies of both Business English and Spanish for Business as we believe that, although there are differences in the answers of the groups, in terms of prevalence of device used, the end result becomes clearer if presented together. Among the devices mostly available to and used by our students, the laptop takes the lead (70.66 per cent). In the case of Business English, 79.7 per cent use the laptop, while in Spanish for Business this percentage drops to 50 per cent. The use of the tablet represents only 11.33 per cent. In the group of Spanish for Business, 31.3 per cent of the students use their mobile phones to complete the activities projected by the instructor of the subject, whereas the percentage of students who use their mobile phones in the teaching-learning process, considering the whole sample, is 15.33 per cent.

6.2. Types of technology

The next question asked the students 'What types of digital technologies were used by the instructors in your undergraduate degree so far?'. The students were given several options: online lessons via Zoom, online lessons via some other platform, Moodle, Google Classroom, Kahoot!, Other. Several students indicated other types of digital technologies which is why Fig. 3 below includes more than the initial five options the students were given, namely Menti, One Note, PowerPoint and e-mail.

Figure 3. *What types of digital technologies were used by the instructors in your undergraduate degree so far?*



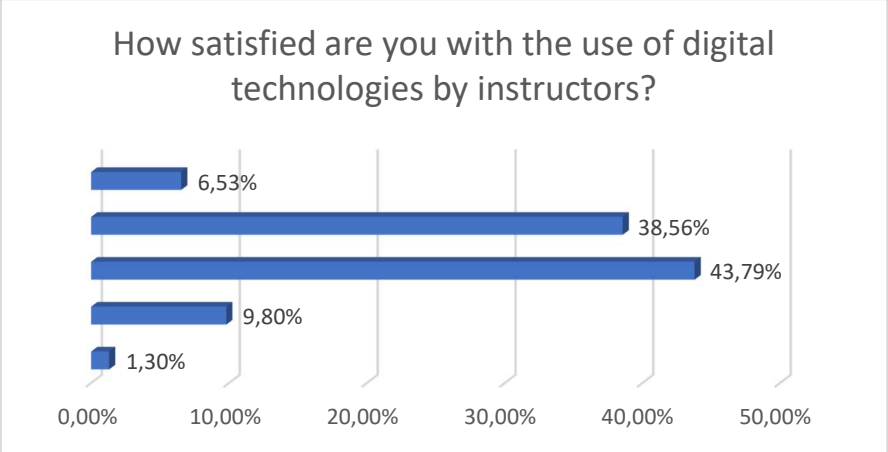
As far as the type of technology (software, applications, platforms, etc.) is concerned, as expected, Moodle, with 72.90 per cent, is the most significantly used. This is a perfectly conceivable end result considering this is the digital space where most of the resources that students use are made available, given that Moodle is the institutional platformed provided by ISCAL. Every student and member of the teaching staff has access to Moodle.

It should be noted that some technologies may be indiscernible in Moodle, in the sense that, as it will surely be the case with many students, when they click on a link to watch a video, for example, they are not aware that they are using another software, in the case, Youtube or VideoAnt, which will be located on another website. In 16.12 per cent of the cases, students mention Zoom, a platform that played an important role during the COVID-19 pandemic and continues to be used occasionally for online classes, meetings or student counselling/student tutorial support. Kahoot! is mentioned thirdly, in 6.45 per cent of cases, which is an indicator of the importance that gamification is achieving in today's teaching environments.

6.4 Level of satisfaction with the use of ICT in the classroom

When asked 'How satisfied are you with the use of digital technologies by instructors?' (Fig. 4), over 80 per cent of the students who took the survey said they are satisfied or very satisfied as far as the use of ICT in the classroom is concerned. Those who were not very satisfied or not satisfied at all totalled 11.20 per cent of respondents and those who were very satisfied were around 6 per cent. These results indicate that students believe there is room for improvement in the use of these technologies in the teaching-learning process, both in the quantity and quality of the tools and resources used.

Figure 4. *How satisfied are you with the use of digital technologies by instructors?*

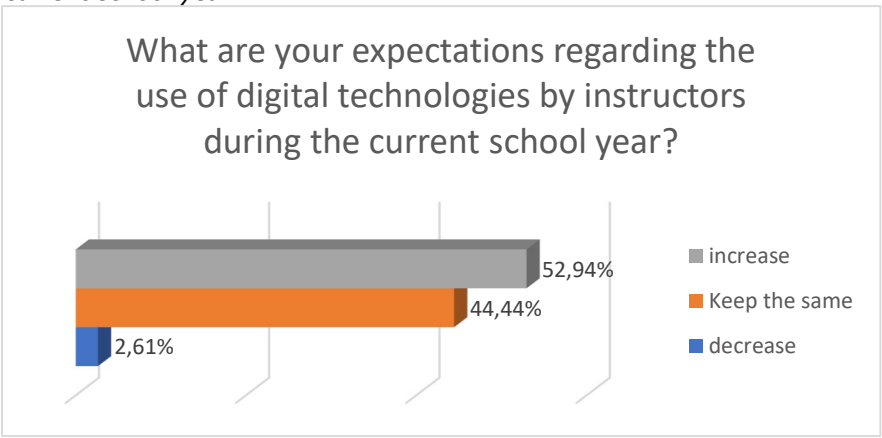


Although we may say that students are overall satisfied with the usage that their instructors make of digital technologies, we believe there is room for improvement, since ten per cent of the students feel their instructors are not doing enough in this field.

6.5 Expectations for the current year

The next question asked students 'What are your expectations regarding the use of digital technologies by instructors during the current school year?'. The students were given three possibilities: I expect it to decrease, I expect it to remain the same, I expect it to increase (Fig. 5).

Figure 5. *What are your expectations regarding the use of digital technologies by instructors during the current school year?*

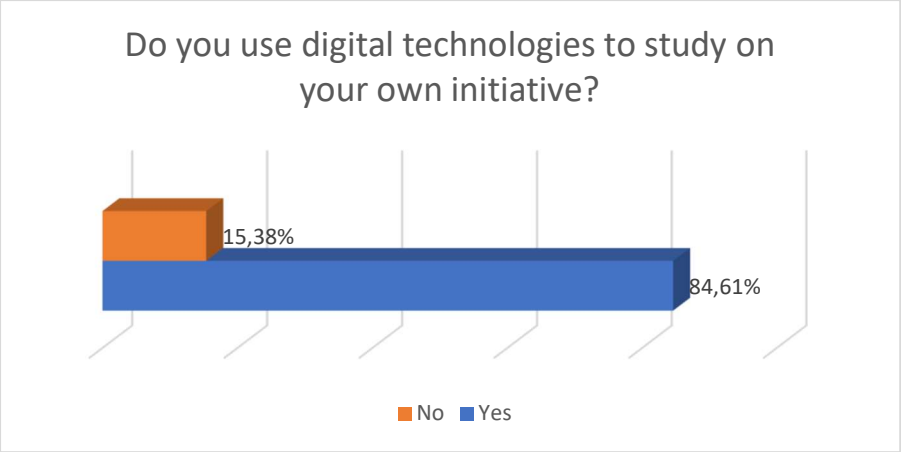


Speaking from the point of view of our own experience and based on the current literature on the topic, we can safely state that the usage of digital technologies in the teaching-learning ecosystem is here to stay. Our students seem to think likewise, and their responses to this question have reinforced the prevalence of digital technologies in the classroom. The overwhelming majority of the respondents believes that the usage of digital technologies in education will not become a thing of the past, and only 2 students (2.61 per cent) believe that their use will decrease.

6.6 Technologies in autonomous study

The next question was made to assess whether students resorted to digital technologies in a learning context of their own free will. They were given two options – Yes or No – with additional room to state which technologies they use autonomously if they had answered Yes (Fig. 6).

Figure 6. *Do you use digital technologies to study on your own initiative?*



When asked 'Do you use digital technologies to study on your own initiative?', 84.61 per cent of students said they use digital technologies to study autonomously. This is a substantial figure which begs for reflection and should encourage us to contemplate the importance of including technology appropriately when working on student autonomy in the teaching-learning process.

7. Final notes

In a background paper for UNESCO's Futures of Education Initiative, Facer and Selwyn discuss a 'non-stupid' optimism regarding digital technology in education. The authors have found evidence of six foundations that are worth repeating here (Facer & Selwyn, 2021, p. 16):

1. That digital technologies alone do not transform education

2. That digital technologies do not improve learning

3. That digital technologies do not fix inequalities

4. That digital technologies do not alleviate instructors' work

5. That there are unintended consequences of digital technology use in education that are impossible to predict and that stretch far beyond matters of learning; and

6. That any 'impacts' are context specific and tied with socio-technical factors

Digital technologies are not the fix-all solution that the overly optimists announce. Experience tells us that there are some pitfalls in this process tied mainly to the fact that we often end up losing some students to social media. With unrestricted access to their mobile phones and the Internet in class, some students will inevitably start deviating from the activity at hand and will take the opportunity to check their social media profiles. This is something that we intend to tackle in the future by creating more engaging and interactive content suited to the students' generation attention profile. It is clear, however, that the benefits of technology in the classroom outweigh the cons. The key, we believe, lies in finding the tech policy that better suits our needs as educators and the student's expectations (Lang, 2020).

The findings of our study have allowed us to realise that not only do students use digital technologies in a learning environment autonomously, but they also expect their instructors to include them in the preparation of their courses. This scenario is a very favourable one, when we look at the numbers and find out that the overwhelming majority of the instructors of the respondents to the survey already rely on EdTech. This study also allowed us to realise that the digital technologies we resort to should be adapted to the needs and expectations of the students, that they should be varied and respond effectively to the objectives and competences that are to be achieved, and that they should clearly identify the weight and criteria that they will have in the assessment of the students.

Furthermore, with the groups of LSP students we teach, we use digital technologies to enrich a face-to-face teaching-learning environment. We do not intend to go fully digital because that is not the model of the higher education institution where we work. However, the integration of digital technologies in so many of the activities we make with our students allows us to say that, should the need arise, we would have no trouble moving to a fully distance learning model, bypassing the emergency remote teaching solutions we were forced to implement with the COVID-19 pandemic.

We believe the future lies in animated interactive content and that is where we are heading. We also know that artificial intelligence is here to stay and can offer valuable support in the LSP teaching-learning process, including by means of AI chatbots, which can play the role of conversation partners for students to practice before they turn to human interaction, or automated evaluation and corrective feedback and editing tools that can help improving the quality of students' writing (OECD, 2024).

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Recebido 14/03/2024
Aceite 29/06/2024
Publicado 9/07/2024

Annex 1 – Survey

1. Consentimento informado

Check all that apply.

- [ ] Sim
- [ ] Não

2. Género

Check all that apply.

- [ ] Masculino
- [ ] Feminino
- [ ] Prefiro não responder

3. Idade

Check all that apply.

- [ ] Entre 17 e 24
- [ ] Entre 25 e 34
- [ ] Entre 35 e 44
- [ ] Entre 45 e 54
- [ ] Mais de 55

4. Habitação

Check all that apply.

- [ ] Casa de família
- [ ] Apartamento partilhado com estudantes
- [ ] Residência
- [ ] Habitação própria

5. Com base na sua experiência até agora, quantos docentes, em média, utilizam recursos com apoio a tecnologias digitais em cada semestre?

Check all that apply.

- [ ] 0
- [ ] 1-2

- [ ] 3-4
- [ ] 5-6

6. De que forma consulta os recursos ou realiza as atividades propostas que envolvem acesso a tecnologias digitais?

   Mark only one oval.

   - ◯ Telemóvel
   - ◯ Tablet
   - ◯ Computador portátil
   - ◯ Computador de secretária

7. Que tipo de tecnologias digitais foram utilizadas pelos docentes ao longo da licenciatura até agora?

   Mark only one oval.

   - ◯ Aulas online através da plataforma Zoom
   - ◯ Aulas online através de outra plataforma Moodle
   - ◯ Google Classroom
   - ◯ Kahoot!

   Other:

8. Qual o seu grau de satisfação com a utilização de tecnologias digitais por parte dos docentes?

   Check all that apply.

   - [ ] Nenhum
   - [ ] Pouco
   - [ ] Suficiente
   - [ ] Bastante
   - [ ] Muito

9. Qual a sua expectativa relativamente ao uso de tecnologias digitais por parte dos docentes ao longo do corrente ano letivo?

Check all that apply.

- [ ] Que diminua
- [ ] Que se mantenha igual
- [ ] Que aumente

10. Utiliza, por sua iniciativa, tecnologias digitais para estudar?

Check all that apply.

- [ ] Sim
- [ ] Não

11. Se respondeu sim, indique quais.

_____

_____

12. Deixe alguma sugestão ou comentário relativamente à utilização de tecnologias digitais no ensino superior.

_____

_____

Annex 2 – Survey (in English)

1. Informed consent

   Check all that apply.

   - ☐ Yes
   - ☐ No

2. Gender

   Check all that apply.

   - ☐ Male
   - ☐ Female
   - ☐ Rather not say

3. Age

   Check all that apply.

   - ☐ Between 17 and 24
   - ☐ Between 25 and 34
   - ☐ Between 35 and 44
   - ☐ Between 45 and 54
   - ☐ Over 55

4. Housing

   Check all that apply.

   - ☐ Family home
   - ☐ Apartment shared with other students
   - ☐ Student residence hall
   - ☐ Own home

5. Based on your experience so far, how many instructors, on average, use resources with digital technology support each semester?

Check all that apply.

- [ ] 0
- [ ] 1-2
- [ ] 3-4
- [ ] 5-6

6. How do you access the resources or comply with the proposed activities that involve accessing (require using) digital technologies?

Mark only one oval.

- ( ) Smartphone
- ( ) Tablet
- ( ) Laptop
- ( ) Desktop computer

7. What types of digital technologies were used by the instructors in your undergraduate degree so far?

Mark only one oval.

- ( ) Online lessons via Zoom
- ( ) Online lessons via some other platform
- ( ) Moodle
- ( ) Google Classroom

Kahoot!

Other:

8. How satisfied are you with the use of digital technologies by instructors?

Check all that apply.

Not satisfied

Not very satisfied

Satisfied

Very satisfied

Extremely satisfied

9. What are your expectations regarding the use of digital technologies by instructors during the current school year?

Check all that apply.

I expect it to decrease

I expect it to remain the same

I expect it to increase

10. Do you use digital technologies to study on your own initiative?

Check all that apply.

Yes

No

11. If you answered yes, indicate which ones.

12. Leave any suggestions or comments regarding the use of digital technologies in higher education.