QuILL

Quality in Language Learning

Implementation of Digital Language Learning Opportunities in Higher Education

Guidelines for Good Practice

ipb INSTITUTO POLITÉCNICO DE BRAGANÇA

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LIST OF ABBREVIATIONS

CALL – Computer-assisted language learning
CALI – Computer-aided language instruction
CEFR – The Common European Framework of Reference for Languages: Learning, Teaching, Assessment
CEFR-CV – The Common European Framework of Reference for Languages. Companion Volume
CFRIDiL – The Common Framework of Reference for Intercultural Digital Literacies
CLIL - Content and language integrated learning
DIGCOMPE – European Digital Competence Framework for Educators
DigEduPol – Digital Education Policies in Europe and Beyond: Key Design Principles for More Effective Policies
DOTS – Developing online teaching skills
EAQUALS – Evaluation and accreditation of quality in language services
EFL – English as a foreign language
ESP – English for specific purposes
HE – Higher education
HOTS – Higher order thinking skills
ICT – Information and communication Technology
LL – Language learning
LOTE – Learning other languages than English
LOTS – Lower order thinking skills
LSP – Language for specific purposes
LT – Language teaching
OA – Open access
OEP – Open educational practices
OER – Open educational resource(s)
OSS – Open-source software
MALL – Mobile-assisted language learning
MOOC – Massive open online courses
TALL – Technology-assisted language learning
TEL – Technology-enhanced learning
TELL – Technology-enhanced language learning
UDL – Universal design for learning

CHAPTER ONE

QUALITY IN STATE-OF-THE ART DIGITAL LANGUAGE EDUCATION

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ABSTRACT

For the last two decades much has changed in the context of education. Technology advancements in an all connected globalised world enacted new approaches in language teaching, particularly in the context of higher education. This chapter will therefore address state-of-the-art digital language education, supported by relevant literature in the field (e.g.); Arnó-Macià (2012); Atherton (2018); Blannin (2022); Li (2017); Peterson, Yamazaki et al. (2021); Vuorikari et al. (2022) among other related studies, programmes and projects – in order to provide a complete overview of the current situation as far as quality in digital language learning and teaching in Higher Education in Europe is concerned. The chapter also encapsulates and covers a variety of digital tools and resources which have contributed towards the quality of teaching and learning in the depicted context of languages for specific purposes.

1. INTRODUCTION

At the turn of the 21st century, in the context of education, Marc Prensky (2001) coined a new expression – "digital natives" – to define students at a time that had been witnessing a paradigmatic change against the backdrop of constant digital breakthroughs since the last decades of the 20th century. These "digital natives" were part of a "discontinuity" or "singularity" process that transformed "things so fundamentally that there is no going back" (p. 1). As the author argues: "This so-called 'singularity' is the arrival and rapid dissemination of digital technology in the last decades of the 20th century" (Prensky, 2001, p. 1). Prensky named the teachers and educators as "digital immigrants" as they became familiar with the new technologies, adopting (and adapting) them as an effective strategy in their teaching. Moreover, Prensky warned teachers about the need to change if they wanted to get the students' attention (p. 6). One might easily deduce that this approach to technology has mainly allured younger teachers who were more prone to using technology in both their personal life and teaching than the more mature ones who looked at it with more suspicion and trusted the traditional approaches to teaching.

However, even though this might be true in some circumstances, it does not provide a sound argument to justify a more or less permeable attitude towards the use of technology in the teaching context. There is a myriad of factors that either aid or hinder the engagement of teachers with digital literacy in both their personal and professional lives, and more research is needed to provide us with a more insightful understanding of this issue, as Tour claims (2015, p. 127). In this regard, this author (2015), by attempting to identify "a close relationship between language teachers' everyday digital literacy practices and the use of technologies in their classroom" (p. 137), carried out a study that examined "teachers' use of technology use in personal life and teaching" (p. 136). These insights about new

literacies into teaching proved that this new approach to language teaching remains a challenge. As the author concludes:

> Inclusion of new literacies in school settings requires many changes because curriculum and pedagogy are already constrained by external factors. Importantly, it requires individual teachers' efforts because, as this study illustrates, teaching new literacies can be further limited by teachers' digital mindsets. (p. 136)

Since 2001, digital technology has changed more significantly and swiftly, and teachers have accompanied this change as well. According to Johnston et al. (2019): "At a breakneck speed, new technological gadgets are introduced to the marketplace, as the great societal panacea of our generation. Technology is touted in even redemptive terms, akin to religious fervor." (p. v).
Digital technology has unleashed forces in the field of education never seen before and literature has abounded to examine and highlight the potentialities of new technologies in any teaching and learning context (Stanley, 2013; Smith, 2016; Li, 2017; Atherton, 2018; Blake & Guillén, 2020, Blannin, 2022). Additionally, Muñoz-Luna and Taillefer (2018) claim that "the integration of technology into education has been an important agenda for educational reform all over the world" (p. 6). The unceasing discoveries in this field in the first decades of the 21st century challenged and changed approaches to digital education. The teaching of languages also gained a renewed insight into the way languages were taught and learnt as new media and information technology became important ancillary tools to language teachers. Digital resources have thus enhanced teaching and learning possibilities, aligning both teachers and students' digital competences to 21st century challenges based on a digital competence framework. This agenda is highly valued in the new higher education (HE) arena that promotes digital literacy and interactive media for teachers and students (Blannin, 2022; Aguilera, 2022; Tomczyk & Fedeli, 2022), through, for example, the creation of the European Framework for the Digital Competence of Educators (DigCompEdu) set forth by the European Union in 2016 (Vuorikari et al., 2016) and with a new edition in 2017 (Carretero Gómez et al., 2017). We shall explore the progress of this and other frameworks further ahead.
This chapter deals with the integration of digital tools and resources into language teaching education and how it accounts for improving the quality and effectiveness of teaching. In addition, it will briefly examine the context of language for specific purposes and its interconnectedness with the digital world, as this topic will be dealt with in more detail in chapter 6. Through literature review, it will incorporate recent and meaningful studies, projects and programmes that prove the relevance of these viewpoints and attest the state-of-the art trends within the specific domain of (quality in) digital language education in the European higher education context.

2. Digital Competence in the European Higher Education Context

Digital technologies – a wide-ranging concept covering the Internet, digital mobile devices (smart phones, tablets, and the like), Web 2.0 tools virtual reality devices, artificial intelligence and other new and updated digital technologies (Tsvysk & Tsvysk, 2019, p. 562) – form the core of the modern age of technological developments. In fact, the swift rhythm of technological and digital changes catered for new enhanced and more interactive language learning models, such as Computer-Aided Language Instruction (CALI), Computer Assisted Language Learning (CALL) (in use since the 1960s, but with more impact in the 1990s, as literature interest corroborates (Levy, 1997; Beatty, 2003), Technology-enhanced language learning (TELL), and Mobile Assisted Language Learning (MALL). These models created a new learning and teaching framework that facilitated teachers' work.
The transition from Web 1.0, static and passive, to Web 2.0, dynamic and interactive, prompted information massification in real time (Smith, 2016, p. 3). Computer mediated communication became more encompassing with the spread of smartphones as they became a normalised commodity that

paved the way for a new learning area – Mobile Assisted Language Learning (MALL). According to Chinnery (2006), these technologies substantially enhance social inclusion in language learning, having to be used in line with the most adequate pedagogy (p. 9). More recently, Stockwell (2022) also points out the different attitudes to the use of digital technologies:

> Although technology has features more prominently in education (…) since the spread of the Covid-19 virus at the beginning of 2020, there still remain strongly divided opinions as to its long-term use as a viable option to quality education rather than a stopgap until the world recovers from the disaster. (p. 1).

On the one hand, there are those who feel that technology may lag the pedagogical effectiveness in education, and, on the other, there are some who are utterly enthusiastic and optimistic about its effects. However, due to the widespread use of mobile devices, Stockwell (2022) argues that learning through technology, either CALL or MALL, "really does seem bound in expectations that it will make teaching and learning easier" (pp. 5-6). Despite the controversy around the effects of the use of digital technology in education, we must acknowledge the potential of technology to support teaching and learning environments. Nonetheless, the same author (2022) claims that the use of technology in the classroom must be carefully planned and implemented, otherwise it will no longer be effective as the main learning objectives will be missed (p. 2).

In the European context, the European Union continues to promote and update the Digital Competence framework (DigComp 2.2) (Vuorikari et al., 2022). This framework is aimed at developing citizens' digital competences, so they are better equipped to face 21st century technological and social challenges. It provides new examples of knowledge, skills and attitudes and tools for self-reflection, monitoring and certification of digital competences. Additionally, it represents an excellent guide on how the citizens interact, share, engage and collaborate through digital technologies. These modes of action bear resemblance to the four Cs of 21st century skills in the education context: critical thinking, creativity, collaboration and communication. Among the 21st century skills, the digital competence has gained much importance over the last two decades.

The *Common European Framework of Reference for Languages* (CEFR-CV) (European Council, 2020), mentioned in DigComp 2.2, is also a paramount framework that guides European educational systems. Published for the first time in 2001, the CEFR has been constantly updated to meet the continuous challenges of a more pluricultural and plurilingual society. Apart from being a common basis for the uniformization of language syllabi, assessment, curriculum guidelines, among others, across Europe (Council of Europe, 2001), it also aims to foster learner-centredness, life-long learning, sign language, plurilingualism and the pluricultural competence, sustained on a communicative approach. The last version of CEFR-CV (Council of Europe, 2020) added new descriptors, bearing witness to current societal and technological changes:

> The fact that this extension takes the CEFR descriptors beyond the area of modern language learning to encompass aspects relevant to language education across the curriculum was overwhelmingly welcomed in the extensive consultation process undertaken in 2016–17. This reflects the increasing awareness of the need for an integrated approach to language education across the curriculum. Language teaching practitioners particularly welcomed descriptors concerned with online interaction, collaborative learning and mediating text. The consultation also confirmed the importance that policy makers attach to the provision of descriptors for plurilingualism/pluriculturalism. (Council of Europe, 2020, p. 22)

Online interaction is, in fact, a reality that we cannot conceal. The internet has become a powerful medium in our lives and, as such, this new context needs to be added to the wide range of teaching contexts that education has available.

In the scope of the European Erasmus+ research Project EU-MADE4ALL – Integrating Multimodal Digital Literacy and English for International Communication – the Common Framework of Reference for Intercultural Digital Literacies (CFRIDiL) was designed, implemented and tested. This framework stemming from, but going beyond CEFR and DigComp 2.0, embraces a more hybrid classification of skills. Multimodality, digital literacy, and computer mediated communication for global communication represent the great panacea of this framework so that "communication in international and intercultural contexts" proves "successful" and "including more comprehensive multimodal, socio-semiotic and critical skills that take into consideration the expectations of socio-culturally diverse audiences and contexts" (Adami et. al., 2019, p. 11). Above all, CFRIDiL:

> is a definite step towards standardisation of digital skills by promoting transparency and recognition for the evaluation of what a European citizen should know to be a successful communicator in today's digitally-connected world and with the final goal of facilitating learning, employability and mobility. (Adami et al., 2019, p. 14).

In line with European Union guidelines, European HE systems also try to accompany the pace of change and make efforts to foster the digital competence among teachers, educators and learners. The Digital Competence Framework for Educators (DigCompEdu) serves as a springboard to endorse digital competences. As we can read in the document:

> It aims to provide a general reference frame for developers of digital competence models, i.e. Member States, regional governments, relevant national and regional agencies, educational organisations themselves, and public or private professional training providers. It is directed towards educators at all levels of education, from early childhood to higher and adult education, including general and vocational training, special needs education, and non-formal learning contexts. It invites and encourages adaptation and modification to the specific context and purpose. (Punie & Redecker, 2017, p. 9)

Moreover, it places innovation at the heart of all educational institutions, including the HE context, by seizing the potential of digital technologies. Therefore, this framework addresses educators' professional and pedagogic competences along with the learners' competences, focusing on the areas of professional engagement, digital resources, assessment, empowering learners and, finally, facilitating learners' digital competence (Punie & Redecker, 2017, p. 8).
With the aim of showing evidence to policy makers and educators of the effectiveness of policies that foster digital-age learning, the study *Digital Education Policies in Europe and Beyond: Key Design Principles for More Effective Policies* (DigEduPol) was published in 2017 (Redecker et al., 2017). Furthermore, SELFIE – the European tool for schools' digital capacity – is also worthy of mention. Massive open online courses (MOOCs) (MOOCKnowledge, MOOCs4inclusion) have also been added to the research agenda.

3. Quality Digital Language Learning: State-of-the Art Trends and Prospects

One of the main tenets behind the frameworks designed and implemented by the European Commission, led by its Joint Research Centre, is precisely the fostering of digital competences of all citizens to provide them with adequate tools to become more professionally successful and fulfilled both at professional and personal levels. In DigComp 2.2, five competence areas describe what the digital competence consists of namely: (i) Information and data literacy; (ii) Communication and collaboration; (iii) Digital content creation; (iv) Safety; and (v) Problem solving. In the context of language learning and teaching in HE, TELL, technology-assisted language learning (TALL), CALL and MALL meet the needs of the learners and go hand in hand with the demands of an increasingly digital

world. The Internet has provided both the teachers and the learners with a wide array of educational resources.

MOOCs, resulting from the Open Educational Resources movement in 2008, have also been an appealing educational digital resource and strategy. Regardless of MOOCs' democratic outlook, the use of MOOCs continues to pose new challenges in this regard. Deng, Benckendorff and Gannaway (2019) carried out a systematic study that examined the progress and new directions for learning and teaching in MOOCs. The findings led them to conclude that, despite the growing research studies on MOOCs, there has not been enough "systematic research on the learning and teaching dynamics in MOOCs" (p. 58), and reached five main assumptions:

a) evidence-based research is insufficient, especially when regarding the audiences, who are subject to a certain Western cultural hegemony;

b) relevant factors such as motivation seem to be oversimplified in studies on MOOCs;

c) no research has been carried out regarding diverse approaches to learning engagement;

d) measuring learning outcomes is highly simplified and depend largely on grades;

e) so far it is unclear how different key learning and teaching factors relate, despite existing evidence about "more active behavioural and online social engagement" being linked to higher retention rates and academic performance.

Therefore, the authors claim that it is extremely important to consider the learning and teaching factors in the way they interact with one another, and not in an isolated way, so that MOOCs can be better implemented and assessed (p. 58).

MOOCs and all these digital resources and systems have been used as powerful and effective motivation and quality enhancers. As supporting tools to language classes, they add new elements to the methodological approaches to teaching and learning. Bolen (2021) presents a few reasons for incorporating technology-based resources into the language classroom: it is effective as students learn faster; it makes lessons more engaging; learners feel more motivated; learners become more autonomous; the teachers can have access to a myriad of "excellent" resources, such as quizzes, online board games, plagiarism checks, among others; and students, parents, administrators expect the use of the computer in the classroom (pp. 7-8). However, as already emphasised, if technology is used with no careful planning, then pedagogical aims might lose their efficacy. Therefore, it is imperative to know how and when to use technology in the classroom. If using it only for the sake of computer usage, then the learning goals become pointless, but if integrated under very defined aims and strategies, then the results will become much more encouraging.

3.1 GAMIFICATION: A TEACHER'S ODYSSEY

Gamification has also been on the agenda of teachers and educators. A wide variety of game-based learning platforms, language learning websites, online assessment, only to name a few, have mushroomed very recently. These online tools or apps, such as *Flippity*, *Quizizz*, *Quizlet*, *Kahoot*, *Nearpod*, or *Sutori*, create excellent opportunities for the teachers to plan more interactive and motivating lessons. *Duolingo, Edmodo, Class Dojo, Zondle, Languagenut, FluentU, Socrative, Brainscape, The Language Game* and *MindSnacks* are some gamification apps that are normally used in language learning (Prathyusha, 2020). These tools can also be embedded in e-learning courses, such as MOOCs, or others.

It is then important to clarify and classify gamification, from a broader perspective. Games have always exerted a natural attraction on individuals, allowing them not only to enjoy leisure and entertainment activities, but also for learning or even performing many of their activities. They also emerge as an important social and cultural component and are promoters of engagement with motivation (Bozkurt & Durak, 2018).

In the educational context, the use of games as aids or promoters of learning is not a new phenomenon. UNESCO recognises that digital games play an important role in young people's daily lives and considers them pedagogical tools to transfer, enhance and/or develop skills and competences for intercultural dialogue and social and emotional learning to prevent violent extremism (UNESCO, 2021).

However, the widespread use of digital games as a form of entertainment has raised the question of how to harness their potential for educational purposes. It is undeniable that the user of digital games is deeply attracted by and involved in these activities. The widespread use of mobile communication devices has made digital games ubiquitous in students' lives. This media availability and the attraction that games exert on students suggest stimulating options to educators so as to support the teaching learning process. Nonetheless, we can identify different modalities of using these digital games, with as many similarities as differences, namely: Edutainment (Al Fatta et al., 2018), Digital Game Based Learning (Nadolny et al., 2020), Serious Games (Sudarmilah et al., 2018) and Gamification. For the purposes of this chapter, we shall only delve into the latter.

Gamification is "the use of game design elements in non-game contexts" (Deterding et al., 2011, p.10). Chou (2016) defines gamification as "the art of generating fun by involving elements commonly found in games and carefully applying them to productive or real-world activities" (p. 8). For Schlemmer (2014), it is something that "proposes to create a game layer in an application or product, in place of being, in origin, a game" (p. 77). On the other hand, Gartner (2022) puts forth gamification as "the use of game mechanics and design to digitally engage and motivate people to achieve their goals" (para. 1).

Hamari et al. (2014) present gamification as a process of enhancing services by enriching them with gaming experiences. They also extend the definition beyond game mechanics, maintaining that the concept should be understood more broadly as a process in which the user is involved in psychological experiences, just as games generally do. These authors, in developing their conceptualisation of gamification, associate three essential potentialities that justify its use: productive behavioural results (for example, a positive correlation between increased learning effort and increased motivation); positive psychological results (such as, increased motivation resulting from user interaction with game design elements); and motivational resources (i.e. game design elements such as points, leaderboards, badges, levels, feedback, progress indication, among others).

Based on an analysis of dozens of studies on gamification, the same authors, state that all those carried out in education/learning contexts show mostly positive effects, especially in terms of increased motivation and involvement in learning tasks. They warn, however, that the same studies also point to some negative results to be considered, namely: the increase in competitive behaviour and difficulties in the assessment process.

For Vianna et al. (2013), game features such as instant feedback, badges, tangible goals, competitiveness, collaboration and "learning by doing" are essential elements to achieve specific purposes through gamification.

John et al. (2017) argue that learning activities using gamification (motivational resources) lead to a recognition of the importance of learning activities (psychological outcome) which, in turn, conducts to an increase in learning effort (behavioural outcome) that translates into progress in academic performance. In fact, gamification is pointed out as an active methodology that can contribute to motivating and engaging students in activities, fostering learning and shaping behaviour (Kim, 2015).

An improvement in learning performance, interaction with peers and an increase in motivation and engagement are three factors that Zainuddin et al. (2020) highlight from the effects on the use of gamification in education. Referring to interactive learning experiences, Fardo (2013) acknowledges the ability for gamification to help overcome a lack of student engagement, promoting a positive change in behaviour with increased meaningful participation. Therefore, in a game-based environment, learners' level of commitment and engagement increases (Glover, 2013, Kiryakova et al., 2014, Zainuddin et al., 2020, Vankúš, 2021).

There are also other language learning apps like *EducaPlay, Busuu, Babbel, Speakly, QLango,* or similar, that can be useful for both the learners and the teachers as, in there, the former will find all the guidance needed for learning the language of their selection, or the latter can also get ideas from designed and clearly instructed lesson plans or activities to be used in their lessons.

3.2 LINKING TECHNOLOGY WITH LSP

In the field of language for specific purposes (LSP), Arnó-Maciá (2012) examines how technology has transformed LSP teaching and learning. The author argues that technology has provided the LSP teachers with new and hybrid genres, computer tools for gathering and analysing specialized discourse, and the development of online materials and courses (p. 89). In fact, CALL applications have created opportunities for a more collaborative, creative, innovating and motivating learning environment. Muñoz-Luna and Taillefer (2018) regard the integration of technology in the LSP learning classes from two complementary approaches: first, "teachers and other language professionals as digital users of online activities and technological applications", and, on the other side, "Teachers and professionals as innovative creators of those applications contributing from their practical experience (…)" (p. 2). These authors also provide English for Specific Purposes (ESP) teachers with different online teaching tools, like telematics dictionaries, corpora, video clips, among others (p. 2).

Nowadays, more than ever, it is essential to use tools that help the processes of GILT, that is Globalization (G11N), Internationalization (I18N), Localization (L10N), Translation (T9N). To achieve this, linguistic service providers use Computer-Assisted Translation (CAT), along with their own Translation Memories, Translation Editors, Terminology databases, among other tools to ensure productivity and interoperability. In no way are Thesauri, Glossaries, Dictionaries, Grammars, and digital Encyclopaedias to be underestimated. A last word is to be dedicated to machine translation tools within languages services, as well as language teaching.

3.3 ERASMUS+ LANGUAGE LEARNING WITH TECHNOLOGY PROJECTS: A POOL OF KNOWLEDGE

Because current times pose new challenges to language education, subsequently teaching and learning languages effectively and in accordance with the learners' needs has become a priority. That is why integrating and implementing technology in the language learning classroom and online environment have been highly considered in the quality plan for language learning. At a European level, the European Commission, through the promotion of Erasmus+ projects, aims to develop research on language learning and teaching, and implement this technological paradigm in education and, more specifically, in the language field. Additionally, it also caters for different target-audiences: policy makers, learners, teachers and educators, in order to have a more overarching range of influence and change.

In this regard, The Erasmus+ Learning Foreign Languages Online is based on a democratic approach. It is aimed at self-directed language learners with economic difficulties and intends to facilitate language learning online by means of a database of free online resources and therefore promote learners' autonomy. Teachers also have available open educational resources (OERs) as a supplement to "formal instruction settings". This project is led by several European Language Schools (private and non-private) that restricted their study to 7 languages: English, French, German, Italian, Spanish, Croatian and Polish. This is an example of the use of online platforms to support language learning. Another one is DigiTise targeted at teachers over 50 and aimed to improve their digital skills much in line with DigComp2.2. The main intellectual outputs were a handbook and ten MOOC courses.

The Erasmus+ project ITILT 2 – Interactive Teaching in Languages with Technology – channels its scope of research and action to the use of technology for task-based language teaching (TBLT), with the focus on "new and emerging technologies, such as such as tablet PCs, mobile phones, and videoconferencing software" (n.d, para. 1). The educational contexts covered by this project include all levels of education.

Insofar it seems that projects under the Erasmus+ umbrella have gathered approaches and aspects on the field that are not only contemporary in terms of needs in education but also ground-breaking, since research has not been quick enough to establish foundational ideas in the field of technology, languages and higher education.
Therefore, the QuILL project meets the demands of education in the context of technological advances with its scope more channelled than the previous ones. It is aimed at the higher education context and focuses very specifically on LSP. The main objective of the project is to promote innovative practices to enhance the digital capacity of language lecturers at HE level. This is done, first, through the identification and review of high quality and user-friendly digital sources for the teaching of 18 different European languages. This is already online at the project's portal and has received contributions from lecturers all over Europe. Apart from the fact that the project promotes an online-based training of language lecturers on how to select, use and create digital sources for language teaching, it also fosters their capacity to effectively contribute to the development of digital education environments both in remote and on-site teaching. This online training is of paramount importance to support lecturers when changing the paradigm towards a technology enhanced language classroom.

4. Concluding Remarks

The increasing number of research, whether resulting from literature, Erasmus+ projects or other European Union programmes, on the integration of digital technology into the language learning contexts proves the relevance of technology-based resources as an important quality asset to be contemplated in methodological approaches to education as a whole.
Considering the HE context's idiosyncrasies, it must be mentioned that it was still able to embed all the approaches which have been encapsulated along the years, regarding both technology and language learning. The QuILL project seems an outcome of this path.
The learning and teaching of languages in the (near) future is indubitably linked with the digital paradigm that now permeates all aspects of our lives, and quality will always be a major concern in education and in language learning. Subsequently, language learning enhanced by technology is, with no doubt, an innovative asset that all players in education must endorse and use in a comprehensive, yet prudent, way so that students, who are the ultimate target-audience of all this new technological approach to teaching and learning, continue learning languages in a supported, engaging and effective manner.

Links to External Resources

DigiTise: https://digitiseproject.eu
Project EU-MADE4ALL – Integrating Multimodal Digital Literacy and English for International Communication: https://www.eumade4ll.eu
SELFIE – the European tool for schools' digital capacity: https://www.pankampylis.eu/project/selfie-the-european-tool-for-schools-digital-capacity/)
The *Digital Competence Framework for Educators* (DigCompEdu): https://joint-research-centre.ec.europa.eu/digcompedu_en
The Erasmus+ Learning Foreign Languages Online: https://www.learninglanguages.eu
The Erasmus+ project ITILT 2 – Interactive Teaching in Languages with Technology: https://www.uantwerpen.be/en/centres/linguapolis/research-projects/national-international-projects/international-projects/itilt2/

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