

English Language Education

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Walaa M. El-Henawy *Editors*

# Optimizing Online English Language Learning and Teaching

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# English Language Education

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Maria-del-Mar Suárez • Walaa M. El-Henawy  
Editors

# Optimizing Online English Language Learning and Teaching

 Springer

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# Introduction



Maria-del-Mar Suárez  and Walaa M. El-Henawy 

**Abstract** The spring of COVID-19 forced teachers to restructure learning materials, content delivery, and learning environment, this leading to utilizing innovative course designs, high-tech learning tools, and engaging web-based learning environments. This shift affects, on the one hand, the perceptions of teachers and learners, and on the other hand, instructional practices, resulting in learned lessons and future envisions about the feasibility of utilizing the web in the context of English language education. In this introductory chapter, we present the background of this special collection on online English language teaching and learning, provide a summary of the expanding corpus of research on online English language education, and introduce the studies published in the collection. This collection of chapters covers the perspectives, implications, challenges, and opportunities of digital transformation in English language education prompted by the increasing accessibility of technology and the COVID-19 pandemic.

**Keywords** Online language learning · Online language teaching · COVID-19 · Online assessment · Web-based instruction · Online learning environment

The advent of the Internet and the accessibility of technology led to the rising of online teaching and learning, which refer to education taking place over the Internet. Online learning, often referred to as ‘e-learning’ or ‘web-based learning’, poses a series of challenges for both teachers and learners. As a result of the COVID-19 pandemic, an urgent need for a more robust understanding of designing and maintaining an engaging and flexible digital classroom environment has emerged. Coronavirus has indeed led to a critical shift to online learning mode. Consequently,

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teachers are facing many challenges concerning choosing appropriate web tools for presenting the content either synchronously or asynchronously, motivating students to participate, and assessing students' learning. Focusing on English as a Foreign Language (EFL), this book offers chapters that provide wise advice coming from real practice or grounded theory on how to approach EFL teaching in this 'new normal' situation, maximizing e-learning environments.

Despite the difficulties it brought about, the COVID-19 crisis gave language teachers many chances to experiment with synchronous or asynchronous online learning tools and gain useful knowledge for their future incorporation in instructional practices. Thus, it is crucial for scholars to record the worthwhile lessons of this historically unprecedented move toward using technology in language education given that online teaching may continue to be a part of language education landscape in the post-pandemic era (Tao & Gao, 2022).

*Optimizing Online English Language Learning and Teaching* serves as a compendium of theory- and concept-based practice chapters addressing practical strategies, techniques, approaches, and methods from theoretical or conceptual perspectives. Besides, it includes research-based chapters with strong pedagogical implications for online English language learning and teaching. Covering topics such as flipped teaching, scaffolded technology-enhanced tasks, MOOCs, online classrooms, digital gaming, mobile learning, and online assessment, this book is an excellent resource for educators of both higher and K-12 education, educational administration, pre-service teachers, educational technologists, and instructional designers, government institutions, policymakers, researchers, and academicians interested in digital English language learning and innovative pedagogies.

This book has multiple objectives: (a) to present an overview of tools, designs, and strategies utilized in providing online teaching and assessment of the English language; (b) to share findings of research on using digital technologies for supporting English language learning; (3) to provide educators with evidence-based online practices for online English language learning and teaching; and (4) to identify promising areas and directions for future innovations, applications, and research in online English language learning and teaching.

This book is divided into two major sections: (a) Issues and Perceptions, covering the most personal side of the learning and teaching experiences through the pandemic and offering an overview of perspectives, factual data, and issues stemming from the pandemic situation; and (b) Practices and Future Envisions, presenting teaching practices that are compatible with online facilities and enhance online learning, outlining online instructional designs and assessment practices covering diverse models and tools for online delivery and assessing learners' performance, and providing implications for structuring a conducive online environment for English language education.

Due to the COVID-19 situation, many teachers have been obliged to engage in emergency remote teaching without any or hardly any prior training. Although the circumstances were difficult, many teachers were able to come up with solutions that resulted in a sense of empowerment (Appel & Robbins, 2021). Additionally, though many students initially struggled with anxiety and a sense of detachment due

to a lack of prior experience with online learning, well-designed pandemic-initiated online English activities provided flexible access to related materials, and built connections between student-teacher and student-student resulting in increased sense of achievement and satisfaction, and becoming able to acknowledge the advantages and challenges of face-to-face and online learning (Kim, 2021; Resnik & Dewaele, 2021). *Part I of this book (Chapter 2 to Chapter 9), “Issues and Perceptions”* sets out to explore how COVID-19 affected EFL learning and teaching overnight, with the pressure to adjust what used to be face-to-face or, at most, blended learning contexts, to fully online situations, going through an unavoidable mid-way phase of emergency remote teaching. This section covers issues and perceptions from two integral points of view: that of learners and that of teachers.

Chapter “[Adapting English Language Teaching: Moving Online During the COVID-19 Crisis](#),” by Inmaculada Fortanet-Gómez and Noelia Ruiz-Madrid, adopts an institutional perspective, showing how institutions that were already into blended learning options found themselves forced to go fully online. The authors focus on the changes that this new context meant in relation to the use of multi-modal digital genres and tools. Their results show that while the necessary technology might be at hand of many teachers (and learners), the change in teachers’ philosophy of learning and teaching has stayed, oftentimes, in the past. Therefore, technology might be key, but not enough for the optimization of online EFL, according to these authors.

While the first chapter focuses on higher education institutions, chapter “[Exploring Teachers’ Capacity to Engage with Remote English Language Teaching Environments: The Interface between Theory and Practice](#),” by Kevin Balchin, Antonia Linehan-Fox and Dina Norris, adopts a similar perspective but focusing on secondary schools in Asia (India, Malaysia, and Taiwan). This qualitative study using questionnaire and interview data shows ELT teachers’ capacity to teach remotely had to be modeled overnight and how this might have affected both teacher and student wellbeing. Consequently, the authors claim there is a need to make remote teaching sustainable so as not to overlook the emotional side.

Students’ identities were also affected by this sudden change to forced lockdown study time. More specifically, as explained in chapter “[Positive Surprises and Particular Struggles: A Case Study Exploring Students’ Adjustment to Online Learning and Associated Emotions](#),” by Mari Alger and June Eyckmans. The authors present questionnaire data collected from 40 students enrolled in an EFL university course in Belgium regarding their adjustment process to the role of online learner across six core themes: social, teacher, self, course, technology, and others. Alger and Eyckmans manage to offer, from the findings observed, practical recommendations which go beyond technological dexterity and tackle online learning from a global, human perspective.

Technology is key, for obvious reasons, in an online EFL context. The sudden move to online-only contexts put both teacher’s and students’ digital communicative competence to test, as expounded in chapter “[Students’ Perceptions of Digital Oral Skills Development in University Students of English for Specific Purposes: Strengths and Weaknesses in Digital Communication in the COVID World](#),” by

Jelena Bobkina and Elena Domínguez Romero. The participants in their study, Engineering ESP students, self-assessed their level of digital communication skills in five areas of knowledge: building communication skills (content/cognition and linguistic area), performing communication skills (physical and socio-emotional areas), and creating digital content skills (technical area). The results reveal that nearly half of the students did not consider themselves proficient enough to manage in an online learning environment. This chapter aims to offer solutions to help students overcome their communicative strengths and weaknesses, not only in digital environments, but also in face-to-face ones.

Creating a positive technology-mediated learning environment is critical to achieving a successful digitized learning process. Chapter “[Language MOOCs as an Emerging Field of Research: From Theory to Practice](#),” by Elena Martín-Monje, highlights the importance of Language MOOCs (Massive Open Online Courses) as an emergent and expanding field of research. The authors provide an overview of the state of the art in LMOOCs. The authors present theoretical and practical ideas for incorporating MOOCs in English language learning.

In theory-driven chapter “[A Model for Scaffolded Technology-Enhanced Oral Communicative Tasks](#),” Austin Kaufmann, Luca Giupponi, Adam Gacs and Koen Van Gorp describe a model for the design and implementation of oral communicative tasks under the task-based language teaching model combining asynchronous and synchronous online language instruction to foster communicative language learning through incremental task progressions. Although their model was born in pre-pandemic times, it ensures optimal use of online environments in synchronous times, which became primal in pandemic times. In addition, they include a sample lesson on the topic of online furniture shopping and decision-making and suggestions for optimizing the model for different instructional contexts and pedagogical approaches.

In accord with shifting learning and teaching practices into online settings, assessment as an integral component of any pedagogical program was affected creating a number of pedagogical barriers for the teachers. Chapter “[Transition to Online Assessment: Challenges and Issues for Language Lecturers](#),” by Ferit Kılıçkaya, provides new insights on online assessment practices highlighting the major challenges and barriers experienced by EFL lecturers in Turkish tertiary contexts during their transition to online/distance learning and teaching during the pandemic. The chapter concludes with implications for practice and future directions. Specifically, the author recommends more training for enhancing the digital competences of teachers’ educators and pre-service language teachers, particularly in terms of technical and practical aspects of assessing language online.

Though this shift to remote online learning represents a challenge for students, particularly with managing their own learning, such challenges are maximized in deprived environments and students with special needs. Thus, chapter tackles an often-disregarded community in EFL handbooks: students with specific learning difficulties. Danielle Guzmán-Orth, in her chapter “[Designing for Equity: Opportunities for Online English Language Instruction via Accessible Instructional Design](#),” reviews online contexts from an equity and accessibility perspective and

highlights key interdisciplinary frameworks and principles commonly used in education and digital information settings that could impact equitable instructional access to conclude that there is a need to align policy, research, and practice.

After dealing with the most personal side of what the COVID-19 pandemic meant in EFL contexts, *Part II of this book (Chapter 10 to Chapter 18), “Practices and Future Envisions”* delves into the changes that came together with remote teaching in a wide array of contexts. The sudden shift into emergency remote teaching made language teachers grapple with online platforms trying to incorporate principles of communicative language teaching with quality digital language learning applications, online teaching platforms, learning management systems (LMSs) in order to deliver engaging instruction utilizing a mixture of asynchronous and synchronous online language learning models (Pedrotti et al., 2021).

A high-quality online learning environment depends mainly on the teacher who develops adaptive and innovative learning scenarios, establishes engaging and flexible mediums, and selects appropriate tools, platforms and apps using robust criteria to reinforce learning outcomes. The emergent situation due to the COVID-19 pandemic accelerates educators’ migration to virtual platforms. Chapter “[Flipped Teaching through a Massive Open Online Course and a Debate Project for Learners of English at University: A Case Study](#)” by Ana Gimeno-Sanz, goes mainstream though dealing with a very specific innovative methodology: flipped teaching. She administered pre- and post-course surveys, the results of which show how learners were happy to be able to learn autonomously and collaboratively in an online environment.

Moodle is the focus of chapter “[Exploring Moodle Effectiveness in Fostering Online ESP during the COVID-19 Pandemic: An Analysis of Task Performance and Students’ Perceptions in Online Language Learning Contexts](#)”, by Antonio-José Silvestre-López and Carolina Girón-García, who examine the Cybertask model for designing an ESP online task about psychotherapy integrated into the Moodle platform at a Spanish university. The authors explore the effectiveness of this asynchronous ‘Cybertask-based Lesson’ as compared to an equivalent synchronous online task guided by the teacher during a live online session by assessing the students’ achievement in learning new specialized content as well as their impressions on the tasks regarding perceived interest and usefulness.

Communication is also key in chapter Robb M. McCollum’s “[Developing Speaking Proficiency in Online Courses through Tabletop Role-playing Games](#)”, where the author displays the effectiveness of games in varied domains: to motivate learners, to build rapport, and to encourage learners to practice the target language without overlooking the potential problems coming along with the use of games for language learning. The author also offers recommendations on how games can be adapted to online English language teaching and learning contexts and supports it with the results of an investigation comparing tabletop role-playing games (TTRPGs) with Intermediate and Advanced level speaking functions of the American Council for the Teaching of Foreign Languages (ACTFL) proficiency guidelines.

Speaking is also the focus of chapter “[Digitalizing a Multimodal Genre-based Approach to Teaching Elevator Pitch: Pedagogical implications and Students’ Experiences](#),” by Vicent Beltrán Palanques. In his study, he focuses on the digitalization of a multimodal genre: Elevator Pitch presentations in the ESP context and on the adaptations needed in the transition to an online environment. The survey administered in this study provides the students’ insights in relation to the classroom dynamics, the digital resources used, and the presentation format of this genre.

Chapter “[Optimizing English Pronunciation of German Students Online and With Praat](#),” by Marcel Schlechtweg, outlines how the phonetic software Praat can be used to improve the pronunciation of German learners of English in an online-based environment. The author presents a detailed plan, in a step-by-step manner, of how the phonetic program Praat can be used in the virtual foreign language classroom to analyze and improve one specific piece of English pronunciation. Praat is used to tackle a known source of inaccuracy for German learners of the English language and optimize the realization of the voiceless interdental fricative /θ/, and to distinguish this sound from the common /s/. The author recommends pedagogical implications as Praat offers visualizations to illustrate aspects of speech from a different, namely visual, perspective, which can help understand the accurate articulation of foreign language speech and improve pronunciation.

Chapter “[Developing L2 Reading Skills: The Advantages of Teacher-Algorithm Collaboration in Digital Learning Games](#),” by Roger Gilabert, Matthew Pattemore and Judit Serra, looks at the potential integration of a serious game that uses an algorithmic sequence for the presentation of some linguistic units to promote reading skills. In this mixed-methods study, the authors explore the gameplay behavior and teachers’ perceptions of the learning potential of adaptive technologies in the context of a serious game Navigo: Pyramid of the Lost Words as part of the European Union’s Horizon 2020 innovation program iRead project.

Additionally, switching to the online mode of delivery requires more efforts to fulfill a degree of constructive alignment between the learning outcomes, the assessment strategies and the feedback strategies that focus on improving future students’ performance and enhancing the self-learning aspect of their education (Gkasis, 2021). Chapter “[Assessing L2 English Writing in an Online Environment: A Two-Stage Approach Using Comparative Judgment and Benchmark texts](#),” by Vanessa De Wilde, Geert De Meyer and Pedro De Bruyckere, focuses on the development of an online tool utilizing a two-stage approach combining comparative judgment and benchmark texts for rating beginners’ L2 narrative writing in Flanders.

Also revolving around assessment, chapter “[Using Speech-to-Text Applications for Assessing English Language Learners’ Pronunciation: A Comparison with Human Raters](#),” by Akiyo Hirai and Angelina Kovalyova, presents a study that focuses on the use of speech-to-text (STT) applications, a variety of automatic speech recognition technology, to explore the potential of using such applications to evaluate the pronunciation of adult EFL learners.

Finally, chapter “[A Checklist Proposal for Assessing the Potential of Language Teaching Apps](#),” by Gloria Luque Agulló and Encarnación Almazán Ruiz, highlights the widespread use of mobile applications in EFL teaching and learning at all

educational levels and the increasing difficulty in identifying the most technically and pedagogically suitable application for a specific teaching context. The authors discuss the need to purposely design a functional, accessible checklist to evaluate apps, enabling EFL prospective and novice teachers to incorporate them into their teaching practices.

The transformation into digitalization and the intra-pandemic learning experiences presents challenges and opportunities to both teachers and students. It manifests that students need to be trained on utilizing coping mechanisms and stress management strategies in order to engage in digital classroom activities utilizing various technological resources and tools. Furthermore, this abrupt turn from the conventional physical classrooms to virtual environment settings reflects educators need to incorporate flexible multiple layers of pedagogy into the educational process including group work, direct discussions, video lectures, and summary insights (Lo & Chan, 2022). Also, this digital transformation reinvigorated insights about the professionalism of teachers reclaiming teacher professional identity as instructional designers and implementers of technology rather than positioning them as mere deliverers of the curriculum (Heggart, 2021). This offers the calls for shaping future research trajectories in teacher education programs and renewing teacher professional identity and considering teacher-as-designer in a blended learning environment (Hoffman, 2014).

The COVID-19 pandemic prompted educational institutions to adopt teaching and learning strategies that reduce face-to-face interaction and guarantee a smooth transition to the implementation of online and/or blended learning using learning management systems (LMS) (e.g., Moodle, Blackboard, Canvas) and video-conferencing software (e.g. Microsoft Teams, Zoom) (Kohnke, 2022). Such intra-pandemic learning and teaching experiences highly affect education in the post COVID-19 era by presenting innovative teaching and assessment paradigms and more flexible and personalized delivery modes (e.g. MOOCs and the HyFlex model) that require further research to explore its features and examine the feasibility of these practices particularly in the context of English language education.

This is a book about the perspectives, implications, challenges, and opportunities of digital transformation in English language education prompted not only by the COVID-19 pandemic, and equally valid beyond such dramatic situation worldwide. Written by authors from eight countries across three continents, it is hoped that this book serves as a valuable resource for educators and aid them in creating learning environments that inspire and engage English language learners. Additionally, this book may serve as a primer for new ESL/EFL teachers because it provides principles for selecting and designing technologies, strategies, assessments, and tasks that are well-suited to a varied spectrum of educational settings, always with the aim to enhance learners' satisfaction (Lee, 2021), and thus, hopefully, their whole learning process.

Adopting contextualized perspectives on technology-mediated language learning and teaching in ESL/EFL classrooms, this book establishes a theoretical framework and sheds light on innovative practices within and beyond English language education. We expect that this book delivers what it promises, the optimization of,



until 2020, a voluntarily chosen learning and teaching context which welcomed masses of teachers and learners overnight: the online teaching and learning EFL world.

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**Part I**  
**Issues and Perceptions**



# Adapting English Language Teaching: Moving Online During the COVID-19 Crisis



Inmaculada Fortanet-Gómez and Noelia Ruiz-Madrid

**Abstract** Online and blended teaching has been implemented in many higher education institutions for several decades now. However, the COVID-19 pandemic forced many institutions to change their face-to-face and blended teaching into exclusively online teaching. This resulted in a more frequent and different use of tools and teaching genres (i.e., digital genres) that could eventually lead teachers to the exploration of different teaching approaches. Some research has already focused on digital genres and their characteristics. However, the pandemic has disclosed new practices and applications, which have received limited attention up to now. The aim of the present research is to find out the effect of the COVID-19 crisis on English language teaching concerning the use of multimodal digital genres and tools. English language lecturers in 18 countries were surveyed in April 2020, in the early stages of the pandemic, and then 1 year later, in April 2021. Their answers show that, although most institutions moved to online teaching, it was in the frame of ‘emergency remote teaching’, as there was no real change in methodology. Indeed, teachers reported having learnt and used new tools for their online teaching. Some of them also mentioned the pedagogical advantages and specificities of digital genres for online teaching. Yet, results from the present study show that such expansion of emergent technologies has not led teachers to a further reflection on their teaching practices and ultimately to the adoption of a different pedagogy.

**Keywords** English language teaching · Online university teaching · Online genres · Multimodal genres · COVID-19

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## 1 Introduction

The disruption caused by COVID-19, which first appeared at the end of December 2019 in Wuhan, China (Ducharme, 2021), and its quick spreading to the rest of the world, forced all universities to rapidly move from face-to-face to online teaching (Gewin, 2020; Lau et al., 2020). This dramatic change has raised some critical questions regarding the capability of the universities and their faculty to cope with online teaching in an effective way, not only from the technical facilities perspective but also from the pedagogical one (Sabarini, 2020). Implementing online teaching requires an appropriate pedagogical approach to the teaching and learning process (Castañeda & Selwyn, 2019; Orsini-Jones, 2014), highly trained instructors able to adopt multiple roles (e.g., facilitators, lecturers, guides and supporters) (Luzón et al., 2010) as well as expert users of the new digital genres (Luzón & Pérez-Llantada, 2019). In the case of online language learning and teaching, teachers need to reflect on how to promote the free choice of the materials and the way, time and pace to use them. Interaction and collaborative learning have to be at the core of teachers' pedagogical practices as online learning students especially value the facilities given to engage in discussion with their peers and instructor (Palloff & Pratt, 2013), which becomes particularly relevant in language teaching where oral skills must be practised.

Indeed, the effective combination of all these aspects makes online teaching a challenge for universities, which, still prefer to offer face-to-face or blended-learning courses to full online teaching. However, the COVID-19 crisis compelled universities and faculty to assume this challenge overnight. This sudden need to move online was termed by some researchers as 'emergency remote teaching' (Bozkurt & Sharma, 2020, i) or "emergency eLearning" (Murphy, 2020, p. 492). One of the main differences between online distance education and emergency remote teaching is that the former has always been an alternative for learners, whereas the latter is an obligation. Bozkurt and Sharma (2020, ii) use "emergency remote teaching" to differentiate the present situation due to COVID-19 from online distance education, which "involves more than simply uploading educational content, rather, it is a learning process that provides learners agency, responsibility, flexibility and choice". On the other hand, Murphy (2020) discusses "emergency eLearning" as the most appropriate response to the population, especially university students, against COVID-19, and visualises this situation as a threat if it became permanent, but also as an opportunity to take advantage of the benefits it may disclose for the future education panorama.

Teachers have been forced to adapt their teaching practices to the online context by using "emergent technologies" (Godwin-Jones, 2016). These technologies can be new developments of already known ones (e.g., the development of Google Meet) or pedagogical applications of technologies well established in other fields of human activity (e.g., the use of WhatsApp for the language classroom) (Adell & Castañeda, 2012; Veletsianos, 2010), which may lead to the use of new digital genres and new literacy practices (Luzón et al., 2010). That is the case of the study

by Milojkovic (2019), who explores what Skype –a popular tool for personal and business video calls– can afford in the English language teaching field; or the study by Andujar (2020), who investigates the effectiveness of WhatsApp and Instagram as blended learning tools in the English language learning context. In fact, in the last 10 years the Web 2.0 and Web 3.0 technologies have already afforded a new era of teaching activity characterised, on the one hand, by new teaching environments such as virtual classrooms, social media, videoconferencing, and learning management systems (Horban et al., 2021) and, on the other hand, by the emergence of new digital genres, such as OpenCourseWare lectures (Crawford Camiciottoli, 2020), discussion forums, wikis (Kelly & Miller, 2016), or webinars (Ruiz-Madrid & Fortanet-Gómez, 2017).

Adell and Castañeda (2012) propose a parallel concept to “emerging technologies”: “emerging pedagogies”. The educational use of “emerging technologies” generates the publication of experiences and the discussion on their possibilities. As a result, there should be a co-evolution of technologies and their pedagogical use. However, there are factors such as the attitude, the lack of time or the lack of specific training that may hinder the use of technologies within a robust pedagogical framework. Consequently, there may be a disruption between “emerging technologies” and “emerging pedagogies”, in which “emerging technologies” are only adapted by teachers to continue with their traditional teaching methodologies disregarding the numerous possibilities digital tools and genres can offer to make their teaching practices evolve into ‘emerging pedagogies’. An example can be the use of Course Management Systems (CMS) (e.g., Moodle) as repositories for documents which were traditionally provided in the form of printed dossiers or books.

In this paper, we analyse how ELT teachers in 18 countries in Europe, America, Asia and Oceania have made use of “emerging technologies” during the COVID-19 crisis and try to disclose whether their moving to online teaching involved a transformation of their teaching practice by adopting/developing “emerging pedagogies” (Adell & Castañeda, 2012). We presuppose a main difficulty for the co-evolution of technologies and their pedagogical<sup>1</sup> use, as in this situation online teaching was compulsory for everyone, there was no time for training, especially in its very beginning, and the urgent objective was the continuation of the classes rather than reflecting on the use of certain technology to improve or to change previous teaching processes.

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<sup>1</sup>Please note that “didactic” and “pedagogical” are used as synonyms in this chapter.

## ***1.1 Personal Teaching Environments in English Language Teaching: Digital Tools and Applications for Language Teaching***

The concept of “Personal Teaching Environment” (PTE) is understood as “the set of tools, information sources and activities that a teacher uses in order to teach”, parallel to the concept of “Personal Learning Environment” (PLE), “a set of tools, information sources, connections and activities that a person uses regularly in order to learn<sup>2</sup>” (Adell & Castañeda, 2012, p. 23). As already mentioned, in this paper we aim at exploring to what extent teachers incorporated emergent digital tools and applications in their Personal Teaching Environment during the COVID-19 online teaching period and to what extent their use resulted in ‘emergent pedagogies’ and transformed teachers’ teaching methodologies in the field of English language teaching.

The use of emergent technologies to improve the effectiveness of learning in general, and language learning in particular, has continued to grow during the last two decades. At the time of writing the current chapter (October 2021), teachers can take advantage of virtual classrooms provided by Learning Management Systems (LMS) or Content Management Systems (CMS), such as Moodle or Blackboard (Cabero-Almenara et al., 2019), which afford different functionalities like content management (e.g., to place materials in an ordered way, so that students can have access to them chronologically or thematically), the curation of web-resources, or asynchronous and synchronous communication tools (e.g., a forum or a chat); video-conferencing tools such as Google Meet, Zoom, Skype, or social media applications such as Instagram or WhatsApp. These tools allow teachers to communicate with students both synchronously and asynchronously by means of videoconferencing or the recording of lectures or explanations to be shared online later. For instance, Cuaca Dharma et al. (2017) explore Zoom and Skype and conclude that these tools are effective for grammar and conversation learning in an online learning medium by making the participants interact both in writing and orally and share a presentation screen. Andujar (2020), in turn, explores the potential of Instagram and WhatsApp for the development of communication skills (oral and written skills) and for the design of online tasks in blended language learning environments.

Software packages also provide fundamental tools for enriching language teaching. In this category, Google Workspace and Microsoft Office are worth mentioning. Some studies have proved the effectiveness of Google Workspace for language teaching (Kakoulli Constantinou, 2018). This software package (Google, 2020) has 13 applications that can be used on a PC/Laptop in a computer or with a mobile phone. Some of the most widely utilised applications in higher education seem to be Google Meet for video conferencing, Google Drive to store and share files, Google Forms in order to make simple surveys, and Google Docs, Sheets and Slides in order to create online documents in collaboration (Kakoulli Constantinou, 2018). Regarding Microsoft Office, PowerPoint (PPT) is one of the most popular tools to

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<sup>2</sup>Translation by the authors.

assist teachers when delivering their lectures. Literature on the benefits of PPT for lecturing is extensive. PPT can provide teachers with a roadmap, reinforcing what they say and affording multimodal input that can support different learning styles (Ögeyik, 2016). In the case of language teaching, the visual support of PPT can help the learner to remember vocabulary and to better understand grammar points. Finally, there are numerous banks of curated web resources that allow teachers to reinforce or complement their teaching such as the one created by the BBC.<sup>3</sup>

All these digital tools and resources share one common trait: multimodality. They include different semiotic modes such as images, sounds, videos, hyperlinks, and some even require multimodal oral and written skills. In fact, some of them such as weblogs or forums can be considered as a multimodal digital genre in themselves. Online teaching, thus, goes hand in hand with the development of the digital competence (Redecker & Punie, 2017) and the multimodal competence (Kress, 2003; Ruiz-Madrid & Valeiras-Jurado, 2020). Therefore, teachers need to understand the role of the digital and multimodal affordances in order to develop and design effective “emerging pedagogies” in an online teaching context. To reach this objective, it will be important to provide an evidence-based perspective on what works and does not work but, most importantly, “to understand the characteristics, the processes, the outcomes and the implications of online practices” to prepare and fulfil adequate teacher training, as advocated by Carrillo and Flores (2020, p. 467).

The aim of the study reported in this chapter was to find out the effects of the COVID-19 crisis on English language teaching with a special focus on how the forced migration to online teaching affected the teaching approaches and the methodology used, always from the point of view of the teacher. The research questions we intend to answer are:

RQ1. How did the COVID-19 crisis affect English language teaching?

RQ2. How did it affect the language teaching methodology used?

RQ3. Which were the most frequent emergent digital tools in emergency remote English language teaching?

RQ4. What do teachers think will be their use of online practices in future English language teaching after their recent experience?

By providing insights into English language teachers’ reported practices on their online teaching experiences during the COVID-19 crisis, this paper intends to contribute to the analysis of how this crisis has affected the teaching practices of language teachers in Higher Education, to what extent the online teaching context has made them transform their Personal Teaching Environments and to what extent the presence of digital genres has increased. The results may help institutions take advantage of the experience acquired during this “emergency remote teaching period” and contribute to the elaboration of teacher training programmes that lead to effective “emergent pedagogy” in online distance or blended English language teaching.

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<sup>3</sup><https://www.bbc.co.uk/languages/forwork/index.shtml>.

## 2 Method

### 2.1 Participants

A total of 43 lecturers from 18 countries participated in our study (see Table 1). They were randomly approached according to two main criteria: (i) they had to be teaching English language in a university and (ii) they should have experienced being in lock down due to the COVID-19 pandemic crisis for at least 2 weeks when answering the first questionnaire. Some of them were authors' contacts and others were approached by some colleagues. They were informed about the aim of the research and voluntarily accepted to participate and to share their personal data, which have been kept undisclosed. The 43 participants answered the first questionnaire (Appendix 1 at <https://sites.google.com/uji.es/movingonlinecovid/home/appendix-1>).

As for their experience at the university, most of the participants (81%,  $n = 35$ ) had been teaching for more than 10 years and were teaching a wide range of subjects at different educational levels related to ESP and General English as shown in Table 2 below.

Regarding the second questionnaire (see questions in Appendix 2 at <https://sites.google.com/uji.es/movingonlinecovid/home/appendix-2>), all the respondents to the first questionnaire were contacted again, but only 35 of the 43 participants responded. This second questionnaire was distributed in April 2021, that is, 1 year later than the first questionnaire. Our aim was to find out about the participants' teaching situation and their opinions and reflections on their teaching experience during COVID-19 time. With reference to their situation, results show similar figures to those obtained in the first questionnaire during the first period of the pandemic crisis as shown in Table 3 below. Among the 43 participants in the survey, only 7 (16%) were not teaching online at the time of their response, either because they did not have teaching tasks in the current semester or because their university had decided to stop teaching and not provide online teaching either. That was the case of Kuwait, where online teaching was provided in the first weeks of lockout but was later suspended. One year later, 22.8% (8 participants) were teaching exclusively online, 17.1% ( $n = 65$ ) were already teaching face-to-face and 5.7% ( $n = 2$ ) combined online and

**Table 1** Distribution of participants' responses and code for the countries

Country	N° of responses
China (Ch), Japan (J), USA(US), Brasil (B), Australia (A), Italy (I), Lithuania (L), Austria (au), Poland (P), Turkey (T) and Kuwait (K)	2 x country
Belgium (Be)	7
Spain (Sp), Sweden (S)	4 x country
Portugal (Po)	3
Canada (C), New Zealand (NZ) and UK (U)	1 x country
<b>Total number of countries: 18</b>	<b>Total responses:43</b>

**Table 2** Characteristics of the teachers responding to the first and second questionnaire

Questions	Responses (Total n = 43)
Years teaching English in a HEI	More than 20 years: 44% (n = 19) Between 20–10 years: 37% (n = 16) Less than 10 years: 19% (n = 8)
Subjects and Degrees	<b>Bachelor level:</b> Corpus Linguistics, Introduction to English, English for Academic Purposes, Second Language Acquisition, English Language teaching, Linguistics, Sociolinguistics, English for Business, Scientific English, Introduction to ESP, English and the virtual world, Pronunciation and Comprehension, English for Science and Technology, Maritime English. <b>Master Level:</b> Discourse analysis, MA thesis course, Applied linguistics, Pragmatics of Spoken interaction, Research methods, Introduction to Corpus Linguistics, World Englishes, Language and Society, Language and Diversity. <b>PHD level:</b> Academic Writing and speaking in English, Professional writing.
Previous experience in online teaching	Yes: 55.8% (n = 24) No: 44.2% (n = 19)

**Table 3** Participants' situation when answering the first and second questionnaire

Questions	Responses Q2 (Total n = 35)	Responses Q1 (Total n = 43)
Teaching online at that moment	Yes, exclusively online: 77.% (n = 27) Blended teaching (online/face-to-face) 5.7% (n = 2) No, exclusively face-to-face 17.1% (n = 6)	Yes: 84% (n = 36) No: 16% (n = 7)
Experience in online teaching during Coronavirus crisis	For 6 months: 17% (n = 6) From 6 to 12 months 26% (n = 9) For 1 year: 48,5% (n = 17) For more than 1 year: 8.5% (n = 3)	From 2 weeks to 8 weeks: 88% (n = 38) More than 8 weeks: 7% (n = 3) No teaching: 6% (n = 2)

face-to-face teaching. On the other hand, at the time of answering the first survey, those who were teaching online had been doing so for between 2 months (participants from China) to and 2 weeks which was the minimum required. After 1 year, the time they had been teaching online varied from between 6 months to over 1 year. Nearly half of the participants, 48.5% (n = 17), had been teaching online for 1 year, 17% (n = 6) for 6 months, 26% (n = 9) from 6 to 12 months and 8.5% (n = 3) for more than 1 year. However, these differences respond to personal and academic circumstances and are not related to a university or a country policy according to the participants' answers. What is most relevant for the research is that the situation at the time of responding to the first and the second questionnaire was rather similar, with 84% and 77.3% of the respondents teaching online respectively, a situation which had continued for over 1 year for almost 60% of the participants in the second survey.



## 2.2 *Instruments and Procedure*

As mentioned in the previous section, two different questionnaires were elaborated using Google Forms and participants were sent a link to respond. An exception was made with the Chinese respondents, who were sent a Word document, since Google is not officially accessible from China. The aim of distributing two different questionnaires in two different periods was to observe how the teaching situation reported by teachers in the first questionnaire had evolved in time.

Questionnaire 1 (Q1) included 13 questions (see Appendix 1 at <https://sites.google.com/uji.es/movingonlinecovid/home/appendix-1>). The first four questions were used to find out the profile of the respondents (as presented in 2.1.). Then, they were asked about their teaching experience, as well as the impact of online teaching on their methodology. The next questions dealt with the platforms and applications they had used and the tasks and digital genres they had worked with. Respondents were also required to define the digital approaches they used the most, and finally they were asked about their intentions to use the online genres in their future teaching. Questionnaire 2 (Q2) included 17 questions (see Appendix 2 at <https://sites.google.com/uji.es/movingonlinecovid/home/appendix-2>). The first four questions focused on collecting new information that could have changed as compared to Questionnaire 1 regarding the participants' profile. Then teachers were asked about their teaching experience at that moment and the possible methodological changes, new genres and management platforms participants might have adopted during their teaching in the COVID crisis. Finally, teachers were asked about their views on the changes their teaching had gone through during COVID-19 crisis and whether they saw these changes as permanent in their future post-COVID-19 teaching.

In order to analyse the results, the open answers to the questionnaires have been provided with a code that consists of the number of the questionnaire (1 or 2), the initial of the country the respondent comes from (see codes in Table 1) followed by P (Participant) and a number that represents the order in which the filled in questionnaires were received (ex. 1BeP2 indicates first questionnaire, Belgium and filled-in questionnaire received in second place). The results were compared on quantitative and qualitative bases depending on the questions. Both researchers analysed the answers separately and then compared and discussed them and decided on the best option when they disagreed.

## 3 Results

In order to present the results, they will be related to the four research questions about the effects of the COVID-19 crisis on language subjects and on their methodology,



### 3.1 *Effects of the COVID-19 Crisis on English Language Teaching*

First, it should be highlighted that almost 44.2% (n = 19) of the participants had already taught online before, although there are differences when comparing several countries. Online teaching seems to be less usual in Belgium (only 1 out of 7 participants) than in Spain (all participants had taught online). This means that for almost half of the participants teaching online was not something new. So, while some had already experienced it and felt comfortable with it, others found it very challenging, especially due to the pressure and the lack of time to prepare for it. The main problems teachers had, were related to technicalities, especially when preparing online exams, and the fear of not having enough control of the new channels and tools as reported by 1BeP2, who felt “[s]tressed about potential technical problems (on both the teacher’s and the students’ side) and worried at the prospect of doing official exams online”. As one of the respondents said, most were “[b]oth excited and nervous” (1TP23) (8 similar responses) or just felt excited about it (13 replies in this sense). Their doubts about the results of using the new delivery mode and the digital genres needed for this delivery mode made teachers nervous. In contrast, the opportunities to learn new ways of teaching as reported by 1CP11, who describes the situation as a “a new learning experience”, also made them excited, as explained by one participant from Lithuania:

I think it is a very interesting experience and it did develop my skills as a teacher in various respects. For one thing, I have had to get a firmer grasp on the software and apps that could be used for online communication. It opened an entirely new world of possibilities that could be effectively used in the future. Second, I had to rethink some of the tasks that could only be performed in class and change them to more creative tasks<sup>4</sup>. (1LP7)

Other respondents also referred to problems such as inequity issues regarding an overload of work as compared to the previous situation before COVID (1AuP12), limitations in the access to technologies as computers often had to be shared by several members of a family (1NZP28), invasion of privacy when teachers or students had to show their private house or even their bedroom on the screen (1BP34), or how disorienting it may be to speak mostly to a computer screen (1IP9).

These are problems that do not appear in the second questionnaire. After 1 year of COVID-19 teaching, the respondents were asked about what the pandemic had represented for them. In general, they mentioned a great development in the introduction of new technologies, as a positive point, though still missing face-to-face learning especially important in language teaching, as seen in 2BP33’s words:

Although I feel like I’ve gained some experience in teaching online, I do think that ‘on campus’ teaching works better for language classes/workshops because of the face-to-face interaction and informality. (2BP33)

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<sup>4</sup>Please notice that the participants’ quotations have been reproduced verbatim, and there may be some mistakes.

### 3.2 *Perceived Effect of the Changes Due to COVID-19 Crisis on the Methodology*

The first question lecturers were asked in April 2020 was about the way they carried out their teaching, whether it was synchronous, that is students need to attend the online lecture live, or asynchronous, that is materials including pre-recorded lectures are made available to students, who can have access to them whenever they wish. Many teachers (60.5%,  $n = 26$ ) opted for a combination of synchronous and asynchronous teaching, though over 18% ( $n = 8$ ) still preferred only synchronous and 9% ( $n = 4$ ) asynchronous contact with their students. The comparison of the two pie charts in Fig. 1 also shows that in 2021 asynchronous teaching had disappeared, 8.6% was already face-to-face and there was also hybrid teaching (half of the classes were synchronous online and half of them were face-to-face).

When asked if they changed their methodology of teaching, 24 in Q1 and 23 teachers in Q2 (55.8% and 65.7%, respectively) acknowledged the main changes they made consisted in providing specific guidelines on each task and organising their online materials, 13 in Q1 and 19 in Q2 (32% and 54%, respectively). For instance, one Italian lecturer (1IP13) referred to the pandemic teaching as “the chance to rethink my way of teaching” and added “now I organise better the materials, I provide an introduction to each unit or class to explain how to use the materials and I provide specific guidelines on each task.” This is in line with what 16 participants (37%) answered in 2020. They provided an introduction to each unit and 14 (32.6%) also supplied a key for all the activities. However, only 11 (31%) and 8 (23%) did so in 2021. Some respondents added other answers: they were using more creative tools for their activities (16.46% in Q2) or had added new activities such as asking questions and providing feedback via chat (1BeP2) or encouraging students to take a more active role by completing quizzes and submitting tasks and assignments within a specific period of time (1SP5). This is clearly reflected in 1Pop27’s answer to Q1:

Firstly I provided an introductory video where I explained how classes were going to work during this period. Then, in the first ppt made available to the students, I presented and explained the icons used in the lessons (lead-in/ content/ Practice/ assignment to hand in, etc). In terms of structure, I made sure that each lesson had - an explanation for each slide (as if I was speaking to the students); - materials/exercises for independent practice (with solutions provided); - both video and listening study and practice materials; - supplementary materials for those who wanted to progress in their learning and develop their language competence; - a "tip of the day" where a suggestion is made, eg., to a link to an online visual dictionary; to english online video lessons; karaoke, etc.

Q2 was more specific about methodology changes and the responses indicated that teachers adapted (77%,  $n = 27$ ) and created (60%,  $n = 21$ ) materials for the digital contexts, and introduced new digital tools and resources (71%,  $n = 25$ ) in their teaching as shown in 2BeP12’s answer:

I use videoconferencing to teach bigger groups of students, and interactive tools (e.g., Menti) to prompt answers from students in a non-threatening way. I use collaborative writ-

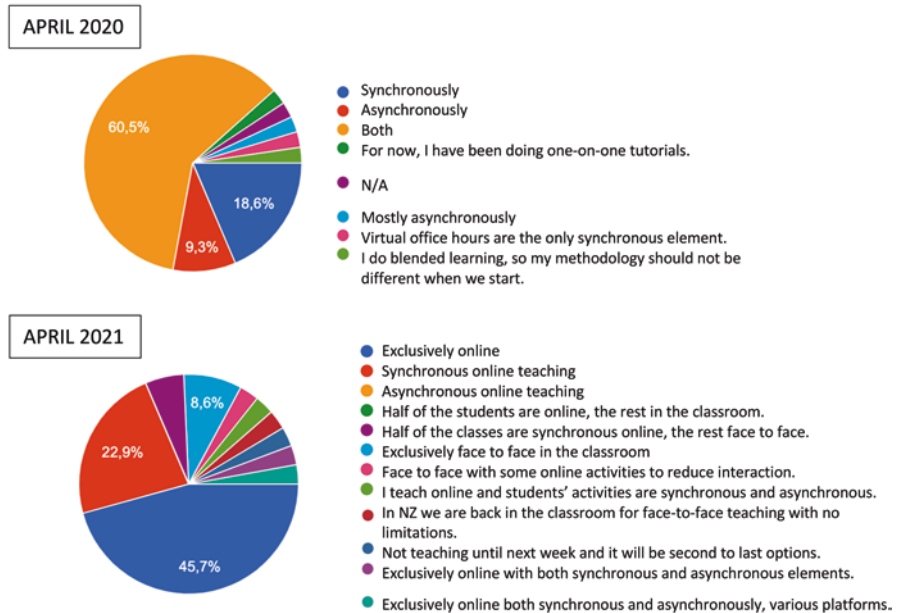


Fig. 1 Teaching in April 2020 and in April 2021

ing tools for pair and teamwork (also on campus, because students cannot come close to each other). Finally, I use video recordings and multimedia presentations as online material that students prepare before they come on campus.

Some other teachers 22.8% (n = 8) said they did not consider they had changed their methodology either because they were already doing blended teaching or because they just adapted the materials or the channel of lectures trying not to alter the methodology as seen below:

I do set similar tasks in a similar order for every class session to avoid confusion. I may be able to become more flexible as both the students and myself become more accustomed to our new reality. (1JP17)

In general, the participants involved in this project did not seem to plan for long-term online teaching, so their online practices seemed to imitate face-to-face classes when teaching online.

[I use digital tools] very differently depending on the task and the intended learning outcome. But in general, I use them to mimic something I might want to achieve in a f2f session. So, I haven't re-designed all my activities sufficiently yet. On the up - I'm more careful with collecting feedback with all of these new session designs. (1SP28)

As for the consequences of the changes due to COVID-19 on language teaching, Q2 respondents highlighted some negative aspects such as lack of socialisation and group cohesion among students (48.6%, n = 17), difficulties when teaching online

as teachers cannot see their audiences (45.7%,  $n = 16$ ) and impossibility to check students' real attendance online (43%,  $n = 15$ ).

### 3.3 *Most Frequent Platforms, Online Tools and Digital Genres in Emergency Remote English Language Teaching*

Teachers were asked in both questionnaires about the digital resources they were using in their emergency remote English language teaching. Concerning platforms, Moodle was clearly predominant in the first period (35%,  $n = 15$ , in Q1), though it became second after 1 year, when Google Classroom had taken the lead (69%,  $n = 24$ ). Blackboard Collaborate, however, was only selected by a few institutions during the whole period, and even fewer teachers selected other systems like Bongo, Canvas, Big Blue Button, the Chinese Tencent tools and special institutionally designed CMS, all of them included in Other in Table 4.

As for online tools, we make a distinction between those video conferencing tools that were used for lecturing such as Zoom or Google Meet, among others, and those used to support teaching, for the creation of materials or complementary resources, such as Kahoot, Mentimeter, or Google docs.

Regarding the online lecturing tools (see Table 5), Zoom was predominant in the whole period with a clear growing tendency (30.2%,  $n = 13$  in Q1, and 91.4%,  $n = 32$  in Q2); Teams also consolidated its position (7%,  $n = 3$  in Q1 and 69%,  $n = 24$  in Q2); and Google Meet grew more moderately (11.6%,  $n = 5$  in Q1 and 26%,  $n = 9$  in Q2). Other lecturing tools less frequently used included Webex, Skype, Bluejeans and the Chinese Tencent tools.

This question had free choice answers and many of the respondents reported to have used more than one platform and online lecturing tool. Moreover, the answers to this question showed some differences related to countries or institutions. For example, institutions such as Ghent University in Belgium decided all teachers should use Bongo and Ufora, though they were not very popular CMS in other places. Moreover, in China where Google cannot be accessed, English language teachers used Tencent Classroom, Tencent Meet and Rain Classroom, which can

**Table 4** Use of CMS

Cms	Moodle	Blackboard collaborate	Google classroom	Other
<i>Questionnaire 1</i>	35% ( $n = 15$ )	11.6% ( $n = 5$ )	4.7% ( $n = 2$ )	32.5% ( $n = 14$ )
<i>Questionnaire 2</i>	46% ( $n = 16$ )	22.8% ( $n = 8$ )	69% ( $n = 24$ )	22.8% ( $n = 8$ )

**Table 5** Use of online lecturing tools

Lecturing tools	Zoom	Google meet	Teams	Other
<i>Questionnaire 1</i>	30.2% ( $n = 13$ )	11.6% ( $n = 5$ )	7% ( $n = 3$ )	20.9% ( $n = 9$ )
<i>Questionnaire 2</i>	91.4% ( $n = 32$ )	26% ( $n = 9$ )	69% ( $n = 24$ )	37.1% ( $n = 13$ )

only be used within this country, and which replicate the Google tools. On the other hand, a few institutions, for example, in Kuwait, asked teachers to use the platforms created by their universities.

Regarding the teachers' experiences in the use of CMS and online lecturing tools, one of the lecturers surveyed explained how they used the Moodle platform.

We work with Moodle, so all my info & activities are there. I have a 'topic' for each lesson and there I include the slides, activities (e.g., forums, wikis, quizzes), video chat, normal chat; so far, I've also added asynchronous videos, in which I explain what the lesson is about and/or how to do some activities. If the videochat function works well in the future, I will stick to that and give my instructions synchronously. (1AtP12)

Concerning the online tools used to support language teaching, in April 2020 teachers did not mention any specific online tool except for those afforded by the CMS or platform they were using at that moment. However, in April 2021, teachers did mention specific tools such as Menti, Kahoot or Google docs:

I use videoconferencing to teach bigger groups of students, and interactive tools (e.g., Menti) to prompt answers from students in a non-threatening way. I use collaborative writing tools for pair and teamwork (also on campus, because students cannot come close to each other). (2BeP12)

As shown in Table 6, when asked in Q1 about the digital genres lecturers had used for the first time in their online classes, and were still being used after 1 year (Q2), videoconferencing was the most often employed (51.2%, n = 22 (Q1) and 77%, n = 27 (Q2)), followed by chats (41.9%, n = 18 and 74.3%, n = 26), recorded videos (25.6%, n = 11 and 62.9%, n = 22), voice over slide presentations (25.6%, n = 11 and 45.7%, n = 16), and forums (20.9%, n = 9 and 60%, n = 21).

We also asked our informants about the most relevant genre for their online teaching and a description of it. They pointed out videoconferences (42.8%, n = 18), followed at a distance by dubbed or voice over Prezi and PowerPoint presentations (19%, n = 8), in which the students can see the slides and listen to the voice of their teacher explaining them. One of the lecturers made a detailed description of how she used videoconference.

I scheduled each class in Colibri/Zoom and got an ID number which I sent to all students inviting them to attend the videoconference/videoclass. At the scheduled time I "entered" the meeting room and was able to talk to students. In the first class it was mainly clearing doubts, but in the following classes I have been addressing some parts of the content (made available beforehand to all students in ppt classes) and going through specific items that may present some problems for the students. It was very useful that this platform allows the

**Table 6** Use of digital genres

Digital Genres	<i>Questionnaire 1</i>	<i>Questionnaire 2</i>
Videoconference	51.2% (n = 22)	77.1% (n = 27)
Recorded videos	25.6% (n = 11)	62.9% (n = 22)
Voice over presentations	25.6% (n = 11)	45.7% (n = 16)
Chats	41.9% (n = 18)	74.3% (n = 26)
Forums	20.9% (n = 9)	60% (n = 21)

teacher to share documents on the screen and use a white board to write and share that information with the students. (1TP27)

Most teachers both in Q1 and Q2 (see Table 6) reported having recorded synchronous video conferences and made them available to students for asynchronous use. Other teachers opted for pre-recorded videos to be used asynchronously. We also noticed different interpretations for this digital genre. For example, while most teachers understood video conferences as online lecturing, one respondent said that video calls (mentioned as “video conferences”) were “a good replacement for [face-to-face] office hours” (1USP29). Along this line, teachers also consider the use of chats and forums as an effective tool to foster student-student or teacher-student interaction in English in online sessions:

Chat and videolecture are mostly used in my online teaching. The chat allows real-time interactions with students. (1AP11)

I find “forum” is a flexible tool that prompts participation among students and serves a variety of purposes like asking for explanation, peer reviewing, challenging students by posing quick questions ... It also provides a chance for informal communication in the foreign language. (2SpP6)

### ***3.4 Possible Effect of Online Practices in Future Language Teaching in Higher Education***

The final question posed to teachers was about their plans for the future. When answering Q1, some of them (9.5%, n = 4) seemed to be so overwhelmed with their present obligations that they said they had not yet thought about this. The rest (92.8%, n = 39) responded in three different ways: they had not yet made a decision on that (19%, n = 8), they either believed they would carry on using some applications or materials (66.6%, n = 28), or they responded they would not (7.1%, n = 3), as it may affect class attendance (1BeP2) or because they did not think it is appropriate for their language teaching (1SP26). Indeed, some of them had doubts about the usefulness of the materials for their future teaching:

The current method and approach are rather a working alternative, which had to be developed in haste. If one day the Faculty decides to redesign this course into a 100% online, live lectures and voice over ppt using Panopto might be used. Tutorial activities might also be offered via Bb Collaborate or MS Teams. However, given that it is a language-rich course with a particular emphasis on academic written communication, I am not yet sure if online interaction can replace face-to-face instruction and the value the latter brings. There's certainly a different feel and experience. (1NZP28)

In general, lecturers seemed to be more positive about the online experience in Q2 and made more general comments. Almost all respondents said they see blended learning, partly face-to-face and partly online, as the most common in the future. They will also organise better their materials, as they have been forced to do when teaching online and will foster online uploading of writing tasks and videos for

speaking skills assessment, as a specific use of technologies in the English language classroom. One of the respondents even saw an opportunity to change to a flipped classroom, after their online experience: “flipping classroom and switching to a coaching style deepens learning and allows for more catering to individual needs” (1BeP31).

## 4 Discussion

The objective of this study was to find out how the COVID-19 crisis affected English language teaching in terms of the methodology employed and the digital tools and genres adopted.

First of all, it must be pointed out that the participants in the present study were English language teachers from universities all over the world who were contacted in two different periods for two reasons. First, it was expected the answers to the first questionnaire would show a worldwide view of the effect of the COVID-19 crisis on English language teaching concerning the use of tools and digital genres. Secondly, teachers’ answers to the second questionnaire would unveil whether the changes reported in the first questionnaire had survived time and to what extent had been incorporated in the teaching of English language, paving the way for ‘emerging pedagogies’ (see Sect. 1.1).

In April 2020, due to the pandemic, almost all the participants had moved in a very short period of time from face-to-face to online teaching, and, after one complete year, in April 2021, 80% of the respondents remained teaching online or hybrid. The main difference is that in the first period it was usual to find synchronous and asynchronous teaching, while the latter disappeared 1 year later in April 2021. Instead, other hybrid and blended modalities were implemented to comply with the limitations of the number of students on campus. The reason may be the unsuccessful results of asynchronous teaching in which it is very difficult to control the learning pace of the students, as they are free to read or study the materials whenever they wish, and the lack of lecturers’ training to design pedagogical proposals that offer such a flexible learning approach. However, the freedom to choose the materials and the time to learn with them is one of the bases of online teaching, as reported by Palloff and Pratt (2013), and should be promoted in the case of moving from face-to-face to online teaching.

The results revealed a twofold perspective on the experience teachers lived through, which is clearly reflected in their responses shown in Sect. 3.2. On the one hand, and in the first period of the study (RQ1), participants mainly expressed negative aspects such as the difficulties to foster collaborative work or to create group cohesion, to teach without a visible audience or to check students’ real presence in online lecturing, which do not seem to be specific of the discipline but general. Results also indicate lecturers’ anxiety, nervousness, and insecurity due to their lack of knowledge and unawareness about digital and multimodal genres. It seems that many teachers felt they were not ready to assume the multiple challenges the online



learning context brings about, such as curation of resources or effective use of digital genres for pedagogical purposes, as reported by Luzón et al. (2010). These results are in line with the research findings by Redecker and Punie (2017), Ruiz-Madrid and Valeiras-Jurado (2020) and Carrillo and Flores (2020). On the other hand, teachers also viewed this emergency remote learning as an opportunity to move forward in their teaching practices, but mainly referred to the elaboration of materials adapted to online teaching using the available technologies, rather than a reflection leading to online teaching.

Regarding RQ2, results show that, although teachers considered the ‘emergency remote online teaching’ as an opportunity to reflect on their teaching and acquire new skills (see quotations in Sect. 3), they do not seem to have consciously adopted emergent pedagogies. Indeed, most lecturers in April 2021 just highlighted they had adapted their teaching to the circumstances with no time to go beyond. However, when asked what the main changes had been, they acknowledged a better and more conscious organization of their teaching and classroom interaction. In this line, teachers were more aware of the nature of the materials needed for teaching languages in a digital context as well as the need for more instructions, and exercises and activities (RQ1 and RQ2) with keys for self-assessment. They also showed specific concern on the promotion of vertical (teacher-students) and horizontal (students-students) classroom interaction, understood as offering the students the possibility of using tools and digital genres that afforded a more effective practice (i.e., Menti, Kahoot, forums, chats, among others) or in other cases, participating in chats and forums. At this point, it seems that teachers perceive that oral interaction, which is fundamental in English language teaching and regularly promoted in face-to-face teaching, is a difficult skill to be included in the online context, being replaced by student-reaction devices (i.e., Kahoot) or written interaction (i.e., chats or forums).

COVID-19 does not seem to have brought a change in methodology in the English language subjects. The main reasons appear to be the temporality of the situation, accompanied by the lack of time to prepare the materials, in some cases the lack of training received, and more importantly, the need to continue teaching English-language related subjects that had not been designed for being taught online. However, most teachers acknowledged a much more frequent use of technological applications, as evidenced in the responses to RQ1 and RQ2, which resulted in an enrichment of their Personal Teaching Environment, that is, of the set of tools, information sources and activities that they can use to teach.

Regarding RQ3, lecturers were asked about the most frequent emergent digital genres they used. Firstly, there seemed to be uncertainty about what was considered a Course Management System or Virtual Classroom, a task within a platform, an application, or a genre, and responses refer to any of them. Moreover, this is the only question in which some differences were found related to countries, as in the



case of China (Tencent Classroom and Tencent Meet<sup>5</sup>), where there was no access to Google, and instead they had their own platforms imitating those of Google, or to institutional policies, as some universities created their own Course Management Systems (e.g., Kuwait), or lecturing tools (e.g., Ghent University in Belgium). Moreover, the answers to RQ3 showed a better knowledge and an evolution in the use of some tools such as Zoom, Meet and Teams for online interaction, and Moodle and Google Classroom as CMS.

Regarding digital genres, many lecturers remarked they had already experienced the use of most of them. Among the most often used, the online synchronous or, alternatively, recorded lecture deserves special attention, in addition to the voice over slides presentation, the latter especially at the beginning of the pandemic. Both are adaptations of other genres commonly used in the classroom, the teaching lecture, and the accompanying slide presentation. In their online formats, special attention was paid to multimodality and interaction. Online lecturers often shared their screen with the audience to show support documents, and written interaction with the students was encouraged by means of the chat as an alternative for live dialogue. In the case of voice over slides presentations, multimodality was incremented by the incorporation of voice explanations by the teacher and the use of the screen pointer as a mediator between the slides and the oral explanation.

Concerning RQ4, results indicate that teachers made an effort to accommodate their classroom methodology to the digital context by means of specific ‘emerging technologies’ mainly due to the immediate reaction to the situation required in April 2020 as discussed by Bozkurt and Sharma (2020) and Murphy (2020). Yet, 1 year later, teachers’ answers showed that their teaching practices had not moved forward to the complex and comprehensive online teaching paradigm as described by Luzón et al. (2010), Adell and Castañeda (2012), and Palloff and Pratt (2013). Indeed, when asked about their future post-COVID-19 teaching, participants referred to specific and isolated ICT-based proposals to be integrated in the face-to-face class or in a blended context at the most as seen in Sect. 3.4.

## 5 Conclusion

The main objective of this paper was to determine the effect of COVID-19 on English language teaching. Our findings show that both the compulsory lockdown suffered during several months and the special measures taken by many countries in the world for a long period of time had a great impact on higher education. Most universities decided to go online, and teachers had to become familiar with digital tools and genres they had not yet used. Some of these technologies were

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<sup>5</sup>Tencent Classroom and Tencent Meeting have been developed by Tencent Education, a Chinese company founded in 1998, which already developed the most important Social Medium in China, WeChat. Tencent Meeting was released at the end of December 2019 and in February 2020 it was already offered to the international market.

conditioned by governmental or institutional decisions, such as which CMS or synchronous communication tools each university should use.

Most respondents acknowledged to have learned a great deal with this situation and their obligation to teach online. Indeed, teachers reflected on their teaching methods and expanded and enriched their Personal Teaching Environments with more tools and digital genres. With this experience, English language teachers learned and are now more confident to use digital resources, and many will do so in the future, but only to complement face-to-face teaching.

Nevertheless, the emergency remote learning situation did not evolve to specific emergent pedagogies for online teaching, in which the freedom to learn autonomously and collaboratively are central. Indeed, most teachers acknowledged they tried to follow the same methodology as in face-to-face classes. However, results show an increasing multimodality in the materials, activities and eventually the methodology employed by English language teachers, which would lead to a further reconceptualization of the communicative competence that should be involved in ELT online teaching.

This unexpected and disruptive situation has left universities in a better position to develop blended and online learning in the future, as Adell and Castañeda (2012) predicted, and Carrillo and Flores (2020) advocated, though a complete movement towards these modalities did not seem to be a choice for most lecturers, at least in the language learning field. In the near future, there should be more sharing of experiences, more discussion on the effectiveness of emerging technologies in higher education teaching, and also on the emerging pedagogies that should be associated with them. Results also show that language teachers are in need of training in the digital and multimodal competences for language learning purposes, as is also evident from other studies (Deacon et al., 2017; Grazia-Sindoni, 2017; Kakoulli Constantinou and Papadima-Sphocleous, 2020). They need more than occasional training for developing emergent technology-informed pedagogies, which effectively integrate emergent technologies and digital genres. In order to be ready for this ‘journey’ to a digital context, universities should further reflect and work on a design of what Castañeda, Esteve and Adell (2018, p. 13) call “Integral Teaching Competence for the digital world”, which affords a comprehensive model that merges technology and pedagogy.

Before concluding, we must acknowledge the limitations of this study. The number of participants was reduced as compared to the total number of ELT teachers all over the world, and only related to language teaching departments. Therefore, the results cannot be generalised and may not clearly show the differences between the participants and the teachers in other departments. Moreover, their reactions could be conditioned by the stress caused by an unwanted and unpredicted situation, since the study was carried out during the months of compulsory online or blended teaching in many institutions. Further research would be needed in order to confirm and complement the results of this study.

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# Exploring Teachers' Capacity to Engage with Remote English Language Teaching Environments: The Interface Between Theory and Practice



Kevin Balchin, Antonia Linehan-Fox, and Dina Norris

**Abstract** This chapter takes a snapshot of the current situation in terms of secondary school English teachers' capacity to engage in teaching remotely, as has been necessary during the COVID-19 pandemic, in three distinct locations within Asia – India, Malaysia, and Taiwan. In addition, taking account of the potential effects of COVID-19, it seeks to uncover any mismatch between teachers' theoretical understandings of what remote teaching of English language classes involves and what has been happening in practice. It is based upon a small-scale qualitative study that used questionnaire data from English teachers working in secondary schools in different locations and interview data from academics working in the field of English language teacher education in each location. Through the data, the study revisits how teachers' capacity to teach remotely is modelled as well as making recommendations in terms of supporting and training teachers to deliver classes remotely and the need to pay attention to both teacher and student wellbeing in order to make remote teaching sustainable.

**Keywords** English language teaching · emergency remote teaching · TPACK · teacher support and training · staff and student wellbeing

## 1 Introduction

The present study explores how English language teachers engage with remote online teaching, particularly during the COVID-19 pandemic. In undertaking this exploration, a distinction needs to be made between planned online teaching, where the teaching is intended to take place online, and emergency remote teaching (ERT),

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where, as has been the case with the COVID-19 pandemic, teachers have been forced to move from face-to-face to remote online teaching at short notice, often with little or no prior knowledge of what remote teaching might involve. Although a small number of the participants had some experience of teaching English remotely before the pandemic, the remote teaching they refer to in this study is best described as ERT as it came about through face-to-face classes being transferred to a remote online environment with very little warning or planning.

This study connects with previous studies by Balchin and Wild (2015, 2016, 2018, 2020), which investigated technology use in English language classrooms in secondary schools in Malaysia. Those studies focused on the factors that may act as barriers or enablers in introducing different technologies into language classes, whereas this study, while remaining focused on technology use, focuses on ERT and broadens the geographical range to include both India and Taiwan as well as Malaysia.

The study is underpinned by the Technological Pedagogical and Content Knowledge (TPACK) framework (Mishra & Koehler, 2006; Mishra, 2019). At the same time, it recognizes that the TPACK model, designed with technology use within face-to-face teaching and blended scenarios in mind, may not be sufficient to allow full consideration of ERT or the impact of the period of ERT during COVID-19 on technology use in the future.

This chapter also makes recommendations concerning the knowledge, support, and training teachers need to teach remotely, and argues for greater consideration to be given to teacher and student wellbeing in remote teaching environments.

## 2 Literature Review

The section sets out to capture pre-pandemic writing relevant to the debates around technology and pedagogy, define key terms, and identify themes and threads as they emerge. The chapter covers three geographical locations: India, Malaysia, and Taiwan, and this has also influenced the type or range of literature included.

The first part focuses on barriers to technology use pre-COVID-19 pandemic, much of which has remained relevant during the pandemic. The second part explores the ERT situation necessitated by the COVID-19 pandemic. The final two parts discuss the TPACK model for incorporating technology into teaching and learning, and how this model might be refined, particularly in the light of the pandemic.

### 2.1 *Barriers to Technology Use Pre-pandemic*

There have been many studies and discussions around the barriers to integrating technology into teaching (e.g., Cárdenas-Claros & Oyanedel, 2016; Ertmer et al., 2012; Walker & White, 2013), with some specifically focusing on integrating

technology into English language classes (e.g., Balchin & Wild, 2015, 2016, 2018). Though these studies tend to focus on integrating technology into classroom teaching, the issues they raise with technology use remain pertinent to online as well as face-to-face instruction, and to learning beyond the classroom more broadly.

In terms of barriers to technology use in teaching, a distinction can be made between internal barriers such as teachers' confidence and external barriers such as the availability of resources, and, as Ahmad (2014) notes, internal 'teacher factors tend to outweigh [external] school factors in hampering teachers' uptake of technology' (p.1).

At the same time, it is acknowledged that there is more potential for internal factors to be overcome than external barriers (Balchin & Wild, 2015, 2018; Chen, 2010; Ertmer et al., 2006). Balchin and Wild (2015) therefore suggest a primary focus within English language teacher training programs on:

internal factors in order to promote positive changes to beliefs in relation to technology. This focus should involve building teacher trainees' knowledge, competence and confidence in using technology in the language classroom ... (so that) fears and anxieties related to technology use can be lowered and a 'can-do' mentality is nurtured with trainees encouraged to push the boundaries of their knowledge and experiment with new tools.' (p. 54–55)

External barriers, however, appear more resistant to change in the short term. Within one of the locations for this study, Malaysia, both Ghavifekr et al. (2016) and Cheok et al. (2017) note that integrating technology into teaching and learning beyond the confines of the school environment remains challenging, as many families, particularly in rural areas, do not have access to the internet at home. These challenges resonate beyond the Malaysian context, with connectivity and access to technological tools being major considerations that have continued to influence learning and teaching in different settings throughout the pandemic.

## 2.2 *Emergency Remote Teaching*

At the onset of the COVID-19 pandemic, both skilled language teachers and those with lesser competences in the field were obliged to relinquish their face-to-face classrooms and engage in new ways of communicating through technology, taking their practice online and teaching remotely from their students. This is now widely agreed to be termed as Emergency Remote Teaching (ERT) (Hodges et al., 2020). It is important to distinguish between ERT and 'planned online learning', which Hodges et al. (2020) describe in terms of:

effective online learning [that] results from careful instructional design and planning, using a systematic model for design and development. The design process and the careful consideration of different design decisions have an impact on the quality of the instruction. And it is this careful design process that will be absent in most cases in these emergency shifts (para. 8).

By contrast, they view ERT as:



a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances, ... (with the main aim) not to re-create a robust educational ecosystem but rather to provide temporary access to instruction and instructional supports in a manner that is quick to set up and is reliably available during an emergency or crisis (para. 14).

It is evident that teaching and learning under such difficult circumstances is challenging and requires creative thinking and a problem-solving mindset. This contrasts with planned online education courses, which are carefully and methodically designed by groups of professionals.

The necessary response to the pandemic has, in other words, been to continue to deliver classes remotely through whatever means possible and to offer a sense of continuity with little time for consistent planning, the challenges of which should not be underestimated.

Meanwhile, Seabra et al. (2021) conclude that one of the main difficulties teachers have experienced during the pandemic is the increased workload because of the additional time it takes to plan remote classes. Similarly, MacDonald and Hill (2021) note the struggle to balance work and family life, especially for teachers with their children to look after.

Furthermore, Magee (2020) reports difficulties in adapting behavior to remote environments, which lack the non-verbal social cues that face-to-face situations offer. Indeed, computer-mediated communication (CMC) has resulted in mental and physical exhaustion with 'Zoom fatigue' being reported to be a common negative experience (Nadler, 2020). Notably, 'Zoom fatigue' is a newly emerged phenomenon widely understood as anxiety, tiredness, or even burnout from the overuse of virtual communication platforms. It is evident that substantial extra undertakings such as having to learn how to use new technology, select appropriate online platforms, include additional technological tools, and constantly be present in front of a computer screen for teaching and learning purposes, meetings, and tutorials can lead to teachers feeling tired. The situation can become increasingly challenging and often accompanied by feelings of frustration at times of poor internet connection or limited access for teachers and students to adequate technical equipment.

Clearly, ERT can be more stressful than face-to-face teaching and lead to feelings of uncertainty and trepidation among teachers, but it is also an opportunity for teachers and students to explore new horizons and grow collectively through learning new knowledge and skills and applying these in trying to achieve their goals. Ohashi's (2020) investigation of affect in relation to ERT reveals feelings of happiness and thankfulness as teachers discover advantages of teaching remotely using technology, such as through online quizzes and other technological tools for practising language skills and through being able to work from home. Indeed, technology has undoubtedly been a key factor in terms of enabling teaching and learning to continue during the COVID-19 pandemic.

It is also important to highlight the importance of social development for students in any class. Students come to class, face-to-face or online, not simply for learning, but also to socialize and to support one another, as well as to exchange ideas. This point is emphasized by Murphey and Kelly (2020) who believe that the role of online classes is more than just for teaching or delivering information, but



rather they should provide a space for social, mental, and moral development. Thus, the importance of allowing the time and space for this to happen is crucial for both their cognitive development and their wellbeing, particularly during the isolation experienced globally by so many children and their families during periods of lockdown.

### ***2.3 Technological Pedagogical and Content Knowledge (TPACK)***

The study is underpinned by the Technological Pedagogical and Content Knowledge (TPACK) framework (Mishra & Koehler, 2006). As Mishra (2019, p.76) notes, TPACK 'describes the kinds of knowledge required by teachers for successful integration of technology in teaching and it has been widely used in educational research'. It focuses on the interplay between technological, pedagogical, and content knowledge in achieving technological integration. In relation to this chapter, the interface of two areas, technological and pedagogical knowledge is particularly pertinent.

Mishra (2019) adds flexibility to the framework by including the variable of context. This places emphasis on teachers' knowledge and experience of working within the constraints of a particular structure, organization, ethos, or cultural setting, and recognizes the dynamic role played by teachers in relation to local curriculum design and professional development. This addition is also helpful in terms of incorporating allowance for the realignment of teaching imposed by the COVID-19 pandemic, which has varied depending on the setting. Indeed, although the framework implies a more structured approach than ERT during the COVID-19 pandemic has allowed, as a framework for the implementation of technology into classes, it remains relevant in relation to the ERT.

### ***2.4 Moving Forward with TPACK***

Balchin and Wild (2020) identify a need to foreground the element of 'community' either within or in addition to the TPACK framework, highlighting that 'teachers learn through collaborating within a supportive professional community'. Collaboration within professional settings is also emphasised by Saudelli and Ciampa (2016, p. 241), who point out that that interaction within their professional community is something that teachers welcome. It could also be argued that this is a natural part of informal as well as formal discourse within the school environment. In the context of the COVID-19 pandemic and of teachers' roles during ERT, the inclusion of community alongside TPACK seems apposite, particularly given the

importance of community in facilitating professional development, which often takes place within and with the assistance of the broader teaching community.

The COVID-19 pandemic can be seen as a catalyst for encouraging expertise and creativity among both experienced and newly qualified teachers. These teachers have been forced by circumstances into a sudden transition from a face-to-face to an ERT environment, regardless of their experience or competence in using technology and regardless of any external barriers that may exist, such as issues with connectivity. This transition has necessitated a certain amount of co-dependency, sharing ideas among colleagues and the wider teaching community online. This has by default created an accelerated move within many teaching contexts in the direction of what Bax (2003, p. 27) refers to as the ‘normalization’ of technology use, where technology is used seamlessly within the teaching and learning process. At the same time, it could be argued that, in order to continue to move forward in the future, there is a need for reflection and critical assessment of the various platforms and online tools being used in particular settings with regard to their pedagogical benefits.

In terms of recalibrating professional development for language and other teachers, both during the COVID-19 pandemic and in the post-pandemic world, there seems to be a case for refining the TPACK framework to ensure that it is robust and flexible enough to incorporate issues highlighted by the pandemic.

### 3 Methodology

The study informing this chapter was built around the discussions above. More specifically, guided by the theoretical framework provided by Mishra and Koehler (2006), it assesses the current situation in terms of the capacity of secondary school English teachers to engage with remote teaching during the COVID-19 pandemic.

The study was qualitative in nature, based on open-ended questionnaires and interviews with teachers and teacher trainers in the three geographical locations for the study: Taiwan, Malaysia, and India.<sup>1</sup> These locations were deliberately chosen for their varying degrees of access to technology and technological resources outside the classroom, allowing the study to place more emphasis on context, as emphasized by Mishra (2019).

The study explored English language teachers’ perceptions about and attitudes towards teaching remotely, and in doing so attempted to uncover their underlying concerns as well as what they viewed as the more positive outcomes of the shift to teaching English remotely. To guide the study the following research questions were formulated:

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<sup>1</sup>The participants from India were all based in the state of Kerala. This was chosen as a third geographical location, though the authors note that they are not seeking to suggest Kerala is necessarily representative of such a large and diverse country.

- What impact has ERT had on everyday professional practice in English language teaching?
- To what extent are English language teachers equipped to deliver ERT?
- To what extent should English language teacher training adapt to reflect the impact of the COVID-19 pandemic on practice?

### **3.1 Participants**

The participants in the study were drawn from the three geographical locations, with fourteen participants completing open-ended questionnaires and three participants being interviewed.

The English language teacher participants were identified to complete the questionnaire via snowball sampling. They were working in secondary schools, including both resource-rich and resource-scarce working environments, and included teachers who considered themselves both more and less proficient in using different technologies for teaching purposes. The teaching experience of these participants varied from 5 to 22 years.

The English language academic participants who were interviewed, one in each location, were selected based on their professional standing within their remote online teaching community as well as for their experience in remote online teaching and teacher development.

The participants' backgrounds, in terms of their geographical location, age, and years of teaching experience, are summarised in Table 1 below.

In each of the settings, some of the participants were already engaging in teaching classes remotely in the period pre-COVID-19 pandemic, though the vast majority of their colleagues were not. However, even though these participants were at an advantage when the pandemic began, having more experience in creating materials for as well as delivering classes remotely, the teaching described in this study fits comfortably with the bounds of ERT. Even those with experience in teaching remotely, and who had more familiarity with using technology for teaching were faced, with very little advance warning, with a completely new situation and the associated need to get to grips with new platforms and their functionality.

### **3.2 Instruments and Procedures**

The study took a qualitative approach with data collected via open-ended questionnaires and interviews, both carried out online.

The open-ended questionnaire aimed to provide a snapshot of teachers' perceptions about attitudes towards teaching remotely in different geographical locations. Guidelines suggested by Coombe and Davidson (2015) and Hewson et al. (2016) were followed in the creation and administration of the questionnaire, noting that

**Table 1** Participants' backgrounds

<i>Participant</i>	<i>Geographical location</i>	<i>Age</i>	<i>Years of teaching experience</i>
P1	India	38	14
P2	India	45	20
P3	India	29	5
P4	India	35	12
P5	India	32	9
P6	Malaysia	30	6
P7	Malaysia	40	15
P8	Malaysia	38	14
P9	Malaysia	29	5
P10	Malaysia	34	10
P11	Taiwan	38	15
P12	Taiwan	41	17
P13	Taiwan	37	14
P14	Taiwan	47	22
P-A	India	54	30
P-B	Malaysia	32	8
P-C	Taiwan	43	17

'the use of online surveys is now well established' in academic research (Lee et al., 2017, p. 6). The questionnaire itself is given in Appendix A.

The online interviews aimed to provide broader insights into the developments and issues around teaching remotely in different locations. In conducting these interviews, guidelines suggested by Hewson et al. (2016) and O'Connor and Madge (2017) were followed. Hewson et al. (2016) observed that 'researchers using asynchronous IMR [Internet-mediated research] approaches often report obtaining rich reflective qualitative data' (p. 49), and noting that 'Online interviews, conducted in non-real time or asynchronously, are now a fairly common data collection strategy' (O'Connor & Madge, 2017, p. 417).

The interviews were conducted over Zoom and took between 45 and 60 minutes. They were semi-structured, with two of the researchers involved in all the interviews. The following broad initial prompts were used by the interviewers to structure the discussion:

- The current situation with teaching English language remotely
- The benefits and challenges with teaching English language remotely
- Teacher training and development for remote English language teaching

Interviewees were encouraged to elaborate and give specific examples of their working practices and those of their colleagues within these broad areas.

The questionnaires were completed and the interviews were carried out in English. This was not seen as problematic as all participants were English language teachers or English language teacher educators. Additionally, the asynchronous

nature of the online questionnaires provided time for respondents to construct their responses.

### **3.3 Data analysis**

In analyzing data from the open-ended questionnaires and interviews, the approach taken was in line with that suggested by Richards and Morse (2012), who made a distinction between three types of code –descriptive, topic, and analytic– used when analyzing data. Descriptive coding relates to the storage of basic factual data, for example, allocating a number to each respondent to the questionnaire and each participant interviewed. Topic coding of the text in both the questionnaire and interview data was carried out, labeling ‘passages within the text which express a particular idea or refer to an event’ (Murray, 2009, p. 51). At this point, different parts of the data were coded independently by the three researchers, and following discussion three broad themes were agreed upon: ‘moving forward with TPACK’, ‘teacher support and training’, and ‘teacher and student wellbeing’. Through further analysis of the data, moving into what Richards and Morse (2012) refer to as analytic coding, the broad themes were divided into subthemes. For example, under ‘moving forward with TPACK’, subthemes of ‘technological pedagogical knowledge required by English language teachers in ERT situations’ and ‘the role of context in developing TPACK for English language teachers’ were generated.

Having completed the coding process, interviewees and a selection of respondents to the questionnaires were asked to comment on whether these subthemes effectively represented their situation and lived experiences. The comments received were then fed back into the presentation and discussion of the findings of the study outlined below.

In terms of the presentation of the data in the next section: questionnaire participants are coded as ‘P1’ for questionnaire participant 1, then ‘P2’, ‘P3’ and so on; the three interview participants are coded as ‘P-A’ for the first interview participant, ‘P-B’ for the second and ‘P-C’ for the third.

## **4 Findings**

This section is divided into three key areas: moving forward with TPACK, teacher support and training, and teacher and student wellbeing.

## 4.1 *Moving Forward with TPACK*

During the period of ERT, two English language teachers tried to replicate classroom teaching using a variety of online platforms. Interestingly, they made effective use of non-English language teaching-specific technologies such as YouTube, Telegram, Facebook and TikTok. However, these were often used in combination with classroom or language-based applications such as: Classroomscreen, an application designed to offer teachers a student-friendly space in which to present instructions, visuals, and texts appropriately; Grammarly, used for identifying grammatical errors in English, but also as a dictionary for checking definitions and sounds of words; and Google Docs, used to promote collaborative writing in English.

An example of how these were integrated into an online English language classroom was given by P7, who sent a copy of a unit from a textbook to her students through Telegram, conducted skills-based lessons based on the unit via Classroomscreen, and made use of the Grammarly application for vocabulary enrichment and extension. She also used thematically linked extracts from TikTok and YouTube to supplement the materials in the textbook. In essence, a combination of traditional materials projected through and with the addition of new media.

Another participant, P-B, made use of Canva, an app designed to create graphics and presentations, as a means for students to create English language presentations online. P-B also made an instructional video on how to use Canva, which she put on YouTube for her students.

Overwhelmingly, however, questionnaire responses pointed to technical difficulties as being a major barrier to successful remote English Language teaching with technology, with these difficulties generally relating to external factors beyond the control of the teacher, such as connectivity problems, as opposed to lack of technological knowledge, in the TPACK sense, on the part of the teacher. Ten of the fourteen English language teachers who completed the questionnaire referred to technical difficulties of this type. The response from P1, based in India, was typical: 'A large number of students did not have mobile phones and those that had, experienced connectivity issues'. Similarly, P12, based in Taiwan, commented that 'some students lack the hardware to participate effectively – mic/camera'. Student access to technology is clearly a crucial factor in ensuring the continuation of learning and teaching. Added to this, a number of the participants indicated that teachers' attitudes towards technology for English language teaching are not always positive and that not all participants are 'enthusiastic' or 'fond of' using it (P-A, P-B, and P-C).

There were also several concerns raised around technological pedagogical knowledge. Several participants found it difficult to engage students and encourage participation online, with P4 mentioning 'inattentive children', P5 suggesting that there was 'not a chance to face to face interaction', P12 highlighting that she had difficulty in 'encouraging participation from all students ... (and) synchronous teaching makes it harder to have small groups' and P13 stating that she is 'not able to know how many students are actively participating'. P3 further noted: 'teaching

online synchronously has caused me to fall back to teacher-centered teaching'. In a similar vein, P13 also commented that what differs when she teaches English remotely compared to face-to-face is that there is a lack of 'interaction between student-student and teacher-student'.

However, it is also clear that ERT experience has not only pushed English language teachers to evolve their practice and achieve a better understanding of technology, but also to question how they teach. P1, for example, has become 'more high tech', P3 is pushing herself to be 'more flexible and creative', and P4 has become 'an even more active teacher', while P-A reports that his students welcome his 'slower' pace teaching style.

These comments suggest that the use of technology in English language teaching is having a direct influence on pedagogy in terms of student participation, classroom interaction, and the role of the teacher. It is also clear that there is a direct impact on communication between teacher and student. This is not to say that it is impossible to engage students and encourage participation in a remote teaching environment, rather that it is an area of concern, and one where teachers may need more help or where recognition needs to be made that there are aspects of face-to-face teaching which may be compromised when teaching remotely.

Connected to this, break-out rooms, which can potentially provide opportunities for the group work considered essential in English language classes for enhancing speaking skills through communicative activities, were mentioned in each of the interviews, and while they in theory offer a solution to engagement and participation issues, they did not in practice seem either to be used extensively or to work effectively when they were used. From the interview data, it appears that some students 'did not like working in small groups' to learn English online and even complained about the ineffectiveness of such interactions, with one participant describing her attempts to use break-out rooms as a 'disaster' (P-C). Several teachers circumvented the use of breakout groups simply by asking the students to show their faces and be prepared to switch their microphones on when nominated to respond to questions. Some teachers also alerted the students to the chat feature for communication purposes as well as for specific writing tasks such as giving advice.

It seems evident that the impact of technology on English language teaching during ERT has been significant, but that the TPACK interface between Technological Knowledge (TK) and Pedagogical Knowledge (PK) is one where teachers could benefit from further professional development in order to inform and improve their remote teaching practice.

There were also some concerns around attendance. P3, P6, and P-C have experienced problems with students attending classes remotely. This could indicate that some students struggled with their own motivation to study English online or to engage with the remote learning process.

In terms of the materials selected for use during this period. P-A reported making use of YouTube clips for both synchronous and asynchronous activities. He spoke of an English class which was recorded, complete with tasks and links embedded into the materials, which the students would watch, completing the tasks as they went

through the clips. Interestingly, P-A focused on using authentic online materials rather than material specifically designed for the English language classroom.

## **4.2 *Teacher Support and Training***

Participants actively sought resources and support from a wide range of sources for teaching English languages classes online. Resources including webinars, in some cases these being compulsory (P-C), and the broader online English language teaching community were considered as being helpful by seven participants (P2, P3, P6, P7, P8, P12, and P13). Friends and colleagues were cited as providing support by three participants (P1, P5, and P8). A further three participants (P9, P10, P11) cited themselves as being the major source of support. As P9 noted: ‘No more support from anywhere. Knowledge development only through experience.’ A small number of workshops and similar professional development events were also reported as being offered by regional or national educational bodies (P-A, P-B, and P-C).

A point to note here, however, is that the sources of support were relatively unplanned and the levels of support available, beyond going on to the internet and trying to find a solution independently, variable.

In terms of English language teacher training programs, participants in all three geographical locations suggested that using technology for teaching English in traditional classroom situations was included to some extent. However, given the ongoing COVID-19 pandemic and uncertainties about the future, almost all participants noted a need for more emphasis to be placed on blended and online teaching within training programs. As P11 commented, her training was ‘mostly based on the assumption that face-to-face learning was ongoing while technology and blended learning were supplements to it. Also, it was a relatively small part of the teacher training program’. Meanwhile, P6 believed that ‘more exposure and emphasis could also be placed on different methods of blended learning’. Introducing a small number of ‘user-friendly’ apps to new teachers was suggested by P-B as a way of helping practitioners to overcome some of the challenges of teaching English remotely.

Two implications of these comments are that the use of technology in English teaching, in face-to-face and remote online scenarios, needs to be integral to English teacher training programs, rather than being seen as a ‘supplement’, and particularly given the ongoing COVID-19 situation, more attention should be paid to blended and remote teaching and learning within training programs.

## **4.3 *Teacher and Student Wellbeing***

In the harsh reality of transitioning to ERT, mental health and general wellbeing have been largely overlooked. However, participants in the study expressed various concerns for both teachers and students in this area.



Teachers' workload and preparation time were identified as key factors when trying to assess the impact of ERT on their wellbeing. All interviewees communicated the greatly increased amount of preparation time needed for their classes, with P-A and P-B regularly working until 'late at night' and P-C recalling initially having to spend '20 hours to design and prepare a two-hour lesson', which she described as 'exhausting'.

Considering student wellbeing during remote classes, as P10 put it, there is 'no online emotion transfer. But face to face, we see faces, we understand them'. Similarly, P4 commented that 'there is no proper teacher-student relationship being developed. Teachers cannot contribute to the overall development of a student', and P14 noted that it is 'very difficult to have a proper rapport with the children' when teaching remotely. From the interview data, however, it transpired that some lower-level English language learners enjoy interacting online as they are 'comfortable', 'feel more confident', and engage more effectively through the chat function (P-B, P-C). Both P-B and P-C also reported that they enquired about the way their students felt in order to ensure 'emotional wellbeing'.

A specific issue that combines wellbeing and pedagogy was over how to help students struggling to learn English when teaching remotely, with P12 noting that it was difficult to have 'individual conferences targeted at students who need more help' and P12 expressing concern that 'weak students' responses are low'. P-B also noted that she 'had to do a lot of scaffolding' with her students as a means of providing support and guidance, both to the whole group and to those students who needed one-to-one support.

These comments would suggest that paying attention to teacher and student wellbeing is paramount, as teaching and learning in difficult circumstances for extended periods could lead to frustration, burnout, or health problems.

## 5 Discussion

This discussion section builds upon the findings section above, focusing on the same three broad areas: moving forward with TPACK, teacher support and training, and teacher and student wellbeing.

### 5.1 *Moving Forward with TPACK*

In addition to the components of the TPACK model put forward by Mishra and Koehler (2006) and the additional component of 'context' suggested by Mishra (2019), the current study, in line with the findings of Balchin and Wild (2020), emphasizes the need for a community of practitioners to be involved in implementing and developing remote teaching, and in supporting each other in terms of professional development. In comparing the three settings for this study, this common

need for community and support among English language teachers within the settings was far more prevalent than any differences between individual settings.

One aspect of TPACK that has been foregrounded by this study is technological pedagogical knowledge. In particular, the participants frequently raised concern over the lack of or difficulties with facilitating student-student interaction online as well as with ensuring student engagement more broadly.

In terms of student-student interaction, break-out rooms are a possibility, particularly for the enhancement of the students' communication skills in English, though both teachers and students seem to have reservations about these. For teachers, they represent an extra layer of complexity in terms of remote classroom management and for students, there seems to be more reticence to interact in a second language in online groups. The issue with group work in face-to-face situations where stronger students dominate and do most of the work seems to be more problematic with remote teaching in that the teacher cannot simultaneously keep the groups in sight. This is not to say that working in break-out rooms in online English language classes is impossible, and certainly, teachers can help to encourage and enable communication in English through the careful grouping of students, but the study does strongly suggest that group work in a second language in a remote online environment is more challenging than in a face-to-face situation. Several possible reasons for this came up in the data, including the teaching approach when teaching English online being more teacher-centered than when teaching face-to-face classes, the preference of some students to keep their cameras off, and connectivity or sound quality issues. The issue of sound quality was highlighted as particularly important for English language classes since students need to develop listening and speaking skills, appropriate pronunciation and communicative competence in English.

Related to this, there can be challenges regarding student engagement in remote English language classes. Many students work with cameras turned off and teachers do not always feel that they can insist on cameras being on, in part due to potential technical issues that this can cause. Even with cameras on, it can be difficult for teachers to ascertain the level of engagement among students as, unlike with face-to-face teaching, the teacher cannot walk around the room and establish eye contact, and so gain awareness about how focused the students are on their learning. However, some teachers did make conscious use of the chat box in order to check student engagement and to allow students with connectivity issues, particularly those related to sound, an alternative means of online classroom participation.

It may also be that, over time, protocols for online engagement as well as the technology itself will develop in ways that encourage more sustained student engagement. This study suggests that the addition of context to the TPACK model is an important one. In examining English language teachers' experiences of ERT, it is vital to consider context-specific aspects of their teaching environments. For example, the large classes of 50 or more students in some classes in India may encourage a more teacher-centred approach in a face-to-face environment, which is arguably easier to replicate when teaching remotely, and which, as P-A noted, can potentially be enhanced online with the additional use of video clips and the plethora of different online tools. However, where classes are smaller and where the

emphasis is on a more communicative student-centered approach when teaching face-to-face, an expectation to reproduce this when teaching remotely can add to the challenge for the teacher.

Another factor in terms of enhancing learning within a particular setting is the availability of mobile phones, laptops, and computers, the technological knowledge in TPACK. Access to devices can be better at students' homes than in schools, and the move towards an acceptance that these devices are necessary for a child in terms of their education, in this case in their English classes, may represent a further step towards 'normalization' of technology in the teaching process, though there are clearly concerns here around economically disadvantaged students. Further, whether delivery is synchronous or asynchronous also has an impact on students' access to technology at home, as in many cases there is only one device per family and more than one family member may need to use it for study or work. This will clearly have an impact on students' performance in learning English language, whether in relation to anxiety about keeping up with their classes or the absence of peer support via texting or group chats.

## ***5.2 Teacher Support and Training***

A distinction needs to be made between immediate needs in terms of the support for English language teachers to develop their ERT and the medium to long-term need to develop confident and capable online English language teachers.

In terms of their short-term needs, all participants in the study had engaged in some form of professional development to support their ERT, though there were different approaches taken and varied levels of involvement. This development could perhaps be classified as emergency remote teacher development.

In the three geographical locations, as an indirect positive outcome of the pandemic, there seems to be a critical mass of teachers involved in enabling and embedding remote teaching. With the enforced move into ERT across many teaching communities, this has also created support networks for teachers. This contrasts with the pre-COVID-19 period, where there were pockets of teachers involved in remote teaching, including some of the participants in this study. Although these participants managed at the time through a combination of being enthusiastic to try to incorporate technology into their English language classes, having a reasonable level of technological knowledge in the TPACK sense, and tailoring their classes to the practical realities of their students in terms of access to appropriate technological resources, teaching remotely was nevertheless sporadic and located around the edges of 'mainstream' face-to-face teaching, often with limited resources and a lack of colleagues to call on for support. With the onset of the COVID-19 pandemic, it quickly became clear that teaching remotely was going to be necessary, and some teachers quickly engaged in this. Over time, as the pandemic continued, more teachers seemed to realize the need to fully commit to teaching remotely, for example through attending professional development webinars online or researching tools

and platforms online for themselves. This seems to have created a critical mass of teachers committed to developing their capacity to teach remotely. However, professional development did vary between settings as indicated below.

For English language teachers in India, professional development seemed to be undertaken voluntarily, though as P-A noted, referring to attendance at webinars, ‘the inspired ones do it ... about 20% of teachers’, suggesting that the more motivated teachers are more actively seeking to develop their knowledge and skills in technology use.

For English language teachers in Malaysia, professional development again appeared voluntary, but there did seem to be an expectation, for some an obligation, that, as teachers during the COVID-19 pandemic, they should familiarise themselves with different platforms and technologies. Connecting with the findings of Balchin and Wild (2020) from their study which was also located in Malaysia, participants here seemed to view themselves as part of the community of teachers, collaboratively developing their remote teaching.

For English language teachers in Taiwan, there was more overt governmental support in terms of resources for teachers. At the same time, webinars were often compulsory. Mandating teachers to attend webinars seems to be a way of reaching those teachers who might be less willing to seek out development opportunities, though, at the same time, the focus needs to be on offering webinars that provide useful support as opposed to obliging teachers to attend them.

It seems likely that, where a higher proportion of teachers undertake, through obligation or voluntarily, professional development related to technology use in English language classes, the overall quality of the classes should on average be higher.

Because of the speed at which teachers needed to move to remote online English language teaching, the support given, whilst being important in helping teachers maintain contact with and instruct their students remotely during the COVID-19 pandemic, was often put together quickly, without necessarily making allowances for the different contexts in which teachers worked or recognizing the need to realign established pedagogic principles for the remote environment.

In terms of medium and longer-term teacher development for remote online English language teaching, technology use needs to reflect, enhance and enable good practice, rather than simply enable the delivery of lessons. To facilitate this, there needs to be a move from emergency remote teacher development to a more structured approach to integrating blended and remote teaching pedagogy into teacher education. Within English language teacher training programs, there is a need for a more overt focus on teaching remotely, blended learning, and more broadly on the use of different technologies in a face-to-face classroom environment.

Pre-COVID-19, initial English language teacher training programs tended to view blended and remote teaching scenarios as peripheral aspects of teaching. Going forward, both because technology continues to develop rapidly and because of the need for blended and remote teaching to be a more central part of a teacher’s knowledge and skills base, these training programs need to adapt to include these modes of teaching. From this, it follows that there is also a need to develop critical

thinking and emphasize innovation in technology use with teacher education programs, encouraging teachers to question how and for what purpose they are using particular technological tools and online platforms, and to deliver classes in engaging ways with creative use of online platforms.

In order to better prepare our students for a world that seems increasingly unstable from future pandemics, wars, or the implications of climate change, it seems that technology continues to have a stabilizing role to play in English language teaching and education in general. However, this role is one that will require significant improvements in terms of creating supportive student-friendly environments within, for example, chat and breakout rooms, so that students are able to engage effectively with the target language and their learning more broadly. Alongside this, other key issues are ensuring economic accessibility to devices and connectivity for students of all backgrounds and addressing concerns over the safeguarding of children within an online environment.

### ***5.3 Teacher and Student Wellbeing***

As noted earlier, an issue that seems to have been downplayed if not overlooked in discussions around remote teaching is that of teacher and student wellbeing. In this study, it is highlighted in relation to English language teachers and students, though much of this discussion could be applied to the wider teaching and learning community.

There were a number of participants in this study who seemed to have adapted reasonably well to ERT in an online environment. These participants came across as highly motivated to spend considerable amounts of time preparing their classes and had often engaged in professional development, both via online events and through personal exploration. They seemed to possess the 'can do' attitude described in Balchin and Wild (2015) and to seek out ways to make things work, for example by creating YouTube videos to explain to students how to use particular technologies such as Canva as mentioned earlier.

However, even those with broadly positive dispositions towards remote English language teaching across the three geographical locations noted the considerable amount of extra preparation time required, compared to face-to-face teaching. There were examples given of participants spending several hours preparing a single remote class and there must be a question over whether this is sustainable. There is perhaps a heightened risk that teachers may feel burnt out because of the extra time commitment required, experience physical or mental health issues, or simply decide to leave the profession.

Equally, discussions of the relative merits of remote versus face-to-face English language teaching can lose sight of the pastoral aspects of a teacher's role. Teaching remotely inevitably makes it more difficult to offer students the kind of emotional support that is possible when engaging in face-to-face classroom teaching. The remote environment makes it more difficult for the teacher to identify students who

may be struggling with mental health or personal issues as well as with the learning element of the class. At the same time, the more limited amount of student-student interaction in classes, alongside enforced lack of interaction outside of classes in the COVID-19 period, can exacerbate issues with students' mental health. Further, some participants felt that their students were more reticent in informing the teacher of any wellbeing concerns they may have been having during or after remote classes. The potential with face-to-face classes for a focus on student wellbeing is perhaps a partially hidden aspect of these classes, which makes it easier to forget about when classes move to a remote environment, especially in an ERT situation where the emphasis is inevitably on the basics of getting the classes taught rather than taking a broader view which includes student wellbeing.

There is a connection here with the above discussions around TPACK. It might be suggested that awareness of teacher and student wellbeing issues is a part of the contextual knowledge included in the updated TPACK model (Mishra, 2019), or pedagogical knowledge. However, given the growing recognition and awareness of the importance of teacher and student wellbeing, and the difficulties highlighted with maintaining this in a remote teaching environment, there may also be a case for including it more explicitly, or at least including it under the label of 'community', an addition to the TPACK model suggested by Balchin and Wild (2020).

In schools, and places of further and higher education, the fallout from lockdowns due to COVID-19 and the resulting need for ERT on students is only gradually emerging. The resumption of face-to-face learning and teaching has by and large been greeted with relief, allowing as it does, the reintroduction of face-to-face classroom communication, multiple interactions, and the possibilities of building on social, emotional, and educational development. However, it is becoming clear that many students are suffering from heightened social anxiety levels and broader mental health issues that affect their education and general wellbeing.

'Zoom fatigue' awareness and recognizing the signs of CMC exhaustion, understanding the limitations of CMC and its impact on the behavior and attitude of online participants would help mitigate fatigue more effectively. Being armed with strategies to help teachers combat feelings of constant fatigue would allow them to live happier as well as healthier lives. Adaptations in teaching methodology, in terms of face-to-face, blended, and remote online delivery, seem inevitable and could have far-reaching consequences with lessons learned from the pandemic, such as the need to emphasize the importance of social communication and of creating a sense of wellbeing in the classroom, whether remote or face-to-face. Such changes could include time set aside before a remote online or face-to-face class begins to allow for social interaction in a less formal environment and the use of small talk to relax and catch up with friends, with a focus on student input and personalization. Suggestions include taking regular breaks as well as incorporating carefully crafted language-based tasks to encourage physical activity, both remotely and in face-to-face settings.

## 6 Concluding Remarks and Further Research

This chapter has highlighted three areas of focus: moving forward with TPACK, English language teacher support and training, and English language teacher and student wellbeing. The discussion above highlighted both the utility of the TPACK model and the need to build within and upon it. Within the TPACK model, the COVID-19 pandemic has reinforced the need to develop teachers' technological pedagogical knowledge. The importance of context in considering the development of TPACK has also been affirmed. Further, the role of the teaching community, both local and online, in supporting the development of TPACK has been brought to the fore.

Regarding teacher support and training, there has been a great deal of ad hoc teacher support available during the COVID-19 pandemic, which has been of vital importance in enabling the delivery of ERT. The pandemic has also created support networks for English language teachers in using different platforms and technological tools. The next step in terms of embedding teacher support may be to add a more structured element, for example via the inclusion of blended and remote teaching as a central part of English language teacher education programs, and, within this, a focus on developing teachers' critical thinking and creativity in order to use the platforms and technological tools both appropriately and innovatively.

Another issue foregrounded in this chapter has been the need to pay more attention to both teacher and student wellbeing in remote teaching, particularly in ERT situations. The extra burden placed on English language teachers in terms of preparation time and the effect of a more isolated learning environment for English language students, with limited interaction with their peers, have created issues with both teachers' and students' mental wellbeing. This is an area that, in the unexpected move to ERT, seems to have been somewhat overlooked, and that should be given more prominence when considering remote teaching.

Further research is needed regarding this newfound situation. One area covered in this chapter that could benefit from more in-depth research is an exploration into the role of community in remote English language teaching situations, considering, for example, the relative importance of local versus online communities. Another area for further research in ERT situations is evaluating the effectiveness of ERT from different perspectives, including the student perspective. In this area, Hodges et al. (2020) note that ERT should be evaluated with a greater focus on context, input, and the process as opposed to the product of learning. A related concern is that of how to assess English language students when face-to-face assessments and examinations are difficult to conduct. Finally, a further issue not covered in this study but of great importance is the child safety aspect of remote learning. This is another issue that, in the ERT environment during the COVID-19 pandemic, seems to have received limited attention.



## Appendix: Open-Ended Questionnaire

1. Briefly summarise the context of your online teaching experience in the past year (e.g., education level, time involved, class size, synchronous/asynchronous)
2. What challenges have you experienced when teaching online – technical, administrative and/or pedagogical?
3. What strategies have you used to overcome these challenges?
4. How has teaching online impacted on your teaching style?
5. How have you been supported in developing your knowledge of how to teach online?
6. How does online practice differ from face-to-face classroom practice?
7. To what extent *do* teacher training programmes you're aware of cover:
  - (a) using technology in the classroom?
  - (b) blended learning?
8. To what extent *should* teacher training programmes you're aware of cover:
  - (a) using technology in the classroom?
  - (b) blended learning?
9. In the light of current realities, to what extent should teaching training programmes cover online teaching?
10. Looking back, what do you wish you had known about online teaching before you'd started doing it?

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# Positive Surprises and Particular Struggles: A Case Study Exploring Students' Adjustment to Emergency Online Learning and Associated Emotions



Mari Alger and June Eyckmans

**Abstract** Even in situations where online learning is a carefully planned and anticipated part of a study program, the move from face-to-face classrooms to computer-mediated communication environments necessitates a significant role adjustment and instigates a wide array of emotions on the part of students. The coronavirus pandemic presented a unique opportunity to take stock of students' experiences in light of a rapid transition to unknown modes and practices, and to explore associated emotions provoked by such a change. Through a dual theoretical and analytical lens (role adjustment and emotions), we present questionnaire data collected from 40 students enrolled on an English as a Foreign Language (EFL) university course in Belgium regarding their adjustment process to the role of online learner across six core themes: social, teacher, self, course, technology, and other. Patterns of emotions attached to each theme are also identified. From this very specific context, we translate our findings into practical recommendations for teachers to implement in the provision of (emergency) online teaching. While we, as teachers, and our students quickly got to know the weaknesses of online learning firsthand without prior experience of its strengths to guide us, now is the time to deepen our understanding of what it means and takes to be an online learner or teacher in such extraordinary times.

**Keywords** English language learning · (emergency) Online teaching · Role adjustment · Emotions · COVID-19

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## 1 Introduction, Context, and Purpose

In the move from face-to-face (F2F) classroom experiences to computer-mediated communication environments, students undergo a significant role adjustment (Cleveland-Innes et al., 2007). Taking on a new role means engaging in “the expected and generally accepted ways of behaving, acting, and interacting” (Knuttila, 2002, as cited in Cleveland-Innes et al., 2007, p. 5) in a specific environment. In addition to the prerequisites and responsibilities attached to the ‘more generalized role of learner’, online learners must be able to navigate and use new technology, adapt to diverse types and amounts of communication with teachers, peers, and administrators, and assume a greater responsibility for their own learning (Cleveland-Innes et al., 2007, p. 4). These changes instigate a wide array of emotions on the part of students (Cleveland-Innes & Campbell, 2012; Zembylas, 2008), and extensive educational research has shown that both positive and negative emotions impact learning processes and outcomes (Pekrun et al., 2002). Furthermore, adjusting to the new role of online learner may be especially demanding for language students due to the fact that interaction is fundamental to language development. Perhaps stemming from this imperative to participate, language classrooms have been found to invoke intense emotions, from anxiety to enjoyment (see Dewaele & MacIntyre, 2014).

The process of adjustment to an online learning (OL) environment as well as the emotions experienced by first-time online learners have mostly been investigated in situations where OL has been methodically planned. Moreover, students (and teachers) tend to have either proactively chosen to undertake their studies (or teaching) online, or at the very least, online learning unfolds as an anticipated part of the study program. Even when the transition to online learning has been planned, learners may still experience fear for the unknown methodology of online learning, anxiety about technological demands, loneliness due to the lack of F2F interaction, and stress about study-life balance, but also joy and excitement (especially in the initial stages) for the flexibility of OL (Zembylas, 2008, p. 76–77).

While the emergency-induced education solutions implemented in response to the global COVID-19 pandemic must be considered to be distinct from carefully designed, well-established OL experiences (Hodges & Fowler, 2020), similarities can nevertheless be found between the two contexts. For example, as Resnik and Dewaele (2021, p. 3) state, both conditions demand more autonomy from learners than would usually be required in F2F on-campus classes. They found that during COVID-19-induced OL, language learners who scored high in autonomy tended to be able to enjoy their foreign language classes more than their less autonomous peers.

However, there are also undeniable disparities between planned OL and the OL recently experienced by millions of students around the world as a result of the coronavirus pandemic. Firstly, the forced shift from F2F on-campus classes to online alternatives across all arenas of education transpired at lightning speed in March 2020. Learners and teachers alike had no choice but to continue education online to ensure people’s safety. Students who were used to seeing their friends and

peers in, between, and after classes each day had to quickly settle for virtual moments together due to the isolation measures. Added to all of this was the persistent fear for one's own and one's family's health. All in all, it can be said that in the case of emergency online learning (EOL), "it is exactly the suddenness of the emotional burden that distinguishes it fundamentally from regular online classes" (Resnik & Dewaele, 2021, p. 2).

Another core difference between planned and EOL resides in the availability and ability of role models (i.e. teachers and peers experienced in OL) to support novice online learners during the transition process. In the initial period of adjusting to an OL environment, students often "grapple with requirements, looking to their own reasoning, other students, and the instructor for direction about the right things to do" (Cleveland-Innes et al., 2007, p. 12). What makes the context of the present role adjustment study particularly unique is that at the onset of the COVID-19 pandemic, neither students nor teachers had ample experience of or clear expectations for learning and teaching online. In many cases, teachers had little to no familiarity with using OL tools, let alone using them effectively to facilitate interaction or to guide students on how to use them successfully. Language teachers faced additional challenges such as learning about the implications of the medium in the context of teaching a language and how best to facilitate communicative competence considering these constraints and affordances (Hampel & Stickler, 2005).

Much of the important emerging research on students' (emotional) experiences of the COVID-19-induced transition to OL has either gathered data from large-scale, quantitative studies using Likert-scale or tick-box questions (e.g. Besser et al., 2020; Garris & Fleck, 2020), explored students' general perceptions of opportunities and challenges (e.g. Aguilera-Hermida, 2020; Biwer et al., 2021; Murphy et al., 2020), or has focused on specific emotions, for example, anxiety and enjoyment (Resnik & Dewaele, 2021) and boredom (Derakhshan et al., 2021). The aim of this chapter is to gain an in-depth understanding of EFL students' early experiences of EOL by focusing on areas which indicated a role adjustment and to explore which emotions students associated with their experiences.

## 2 Literature Review

### 2.1 Role Adjustment

The sociological concept 'role' is generally defined as the behaviours, actions, attitudes and qualities of a person in a particular social position which are learned through socialization. Socialization refers to the "learning process through which the individual acquires the knowledge and skills, the values and attitudes, and the habits and modes of thought of the society to which he belongs" (Bragg, 1976, p. 3). This dynamic process is realised through the observation of and interaction with role models. For many novice online learners, however, "role models for learning

the required and expected activities are not present until one is already engaged in an online course” (Cleveland-Innes et al., 2007, p. 5). Even when students have begun their OL experience, it is more difficult for them to observe their peers’ social and cognitive behaviours from afar (Bork & Rucks-Ahidiana, 2013). In contrast, F2F classes offer students a “transparent opportunity” to witness “countless examples of role model behaviour on a continual basis” (Bork & Rucks-Ahidiana, 2013, p. 5).

Role adjustment is necessitated by the differences in activities and modes of communication in a new environment (Cleveland-Innes et al., 2007, p. 5) which require the (further) development of specific skills. For example, in asynchronous online learning (AOL) environments, learning is typically facilitated through discussion boards and email. Within this context, a priority for first-time online learners is to ascertain how to use the required technology. When independently engaging in the inquiry-based tasks, learners must gain confidence in expressing themselves through the written word and using these text-based messages as a means to constructively interact with peers. Language learners need to adapt to the fact that “communication is limited to one single mode and happens in a delayed fashion” (Hampel & Stickler, 2005, p. 313). In the absence of structured classes where students meet with their teacher and peers in the same space and time, learners must adjust to the teacher’s reduced presence and nonimmediate feedback and become more self-directed and self-disciplined in terms of learning progress and time-management.

Cleveland-Innes et al.’s (2007) study found that first-time online learners were able to articulate their adjustment process from F2F classes to AOL in answers to open-ended questions. Five themes arose in the analysis: interaction (quantity and value of written communication with teachers and peers), self-identity (increased responsibility for learning); instructor role (visibility and feedback); course design (effectiveness of course structure and delivery); and technology (issues). Furthermore, a related study measured role adjustment by asking students to assess their anticipated experiences of OL activities compared to (1) previous F2F learning experiences and (2) perceived experienced online learners by rating the learning activities on a range of ‘much better’ to ‘much worse’ in each of the two conditions (Garrison et al., 2004). The results showed that in the first comparison, students regarded F2F experiences as more “externally oriented” than OL (thus hinting at adjustments in social and teaching aspects), while in the second comparison, their perceptions of experienced online learners indicated that learning in an online environment is more “internally oriented” (thus hinting at cognitive adjustments) (Garrison et al., 2004, p. 70).

Interestingly, Bork and Rucks-Ahidiana’s (2013) research found that even experienced online learners and their teachers may struggle to “understand how their online roles differ from their roles in face-to-face settings” (p. 1). Although students and teachers tended to agree on their expectations for one another’s roles, their opinions often diverged on how best to meet those expectations. For example, motivation was collectively viewed as an essential quality of online learners, but while teachers expected students to be self-motivated, students felt that teachers should

motivate them with engaging learning activities. In the analysis of role-related expectations for online learners, three core themes which indicated role ambiguity emerged: technological skills, learning management skills, and help-seeking behavior, and in the case of online teachers, the contested areas were communication, feedback, and online presence and pedagogy. These misalignments of skills, behaviors, and attitudes caused stress for both parties, and the frustration expressed by the “largely successful online students” in the study “may help to explain why less successful online students ultimately drop out or fail” (Bork & Rucks-Ahidiana, 2013, p. 24). All in all, the importance of both students and teachers having an in-depth understanding of both roles in OL environments was clearly demonstrated.

Indeed, in the recent coronavirus-induced shift to OL, in many cases neither students nor teachers had experience of or clear expectations for learning and teaching online. Both students and teachers new to the OL environment were thus simultaneously trying to construct their new respective roles of online learner and online teacher, but in all likelihood, these roles will have been rather ambiguous due to the lack of available role models. In light of all the chaos surrounding the unprepared teachers and inexperienced students, it can only be expected that students’ role adjustment to online learner was intensely testing.

## 2.2 *Synchronous Online Learning (SOL)*

As explained above, much of the research on students’ role adjustment has focused on planned, AOL environments. In the present study, students were engaged in both asynchronous and synchronous OL in an emergency context. To better understand students’ role adjustment in SOL, we can look to the affordances and constraints of synchronous communication and thus draw comparisons between SOL and F2F learning.

SOL is implemented through teleconferencing media. Many options for communication exist; audio and video can be set to be one-way (the teacher is heard and seen by the students) or two-way (teachers and students can both hear and see each other), with both conditions usually enabling text-based chat. In synchronous communication environments, interpersonal relationships (teacher-student and student-student) tend to be easier to perceive, establish, and maintain than in asynchronous environments because students and teachers have the possibility to engage in real-time interactions. These real-time interactions create opportunities for students to ask questions and receive immediate feedback and support from their teacher and peers, all of which can cultivate feelings of trust and safety (Tolu, 2010) and decrease feelings of isolation (Howland & Moore, 2002). Even in cases of low-bandwidth where students can only reach their teacher and peers through written chat messages, “the conversational characteristics of chat discourse reflect face-to-face classroom exchanges that are familiar to learners and faculty, hence facilitating the transfer of formal patterns of behavior acquired in physical classrooms to virtual learning environments” (Crook & Light, 2002, as cited in Ling & Sudweeks, 2008,

p. 172). One could therefore argue that the role adjustment SOL requires is not as extreme as in the case of AOL because such immediate interpersonal interactions help to recreate the classroom conditions that students are accustomed to.

However, in contexts such as the one described above whereby students communicate solely (or primarily, as in the case of this study) through text-based chat, students still have to adjust to expressing their ideas and emotions and acknowledging others via the written word; a phenomenon which has been documented in research on social presence (e.g. Tolu, 2010). For example, in a live online class in which the teacher has their webcam and audio on but students have theirs off, when the teacher asks, for example, ‘can you hear me?’, students are obliged to explicitly type a response because non-verbal cues such as a smile or shake of the head are not available. Furthermore, as the teacher cannot physically see the students and cannot therefore gauge their understanding by assessing facial expressions, the onus is placed on students to inform the teacher or to ask questions if they are unsure. On top of this, as teachers must simultaneously manage multiple communication channels, some chat messages may be missed, so students may have to retype their questions. Interacting through text-based chat thus requires conscious effort (Satar, 2011).

Learning in synchronous online classes has been shown to touch on students’ emotions. When reflecting on his experience of facilitating online chat activities, Ng (2004, as cited in Ng, 2007, p.3) found participants’ communication anxiety to be a weighty issue. When opportunities for real-time interaction are available, students are expected to utilize them; indeed, “real-time interaction requires immediate responses” which may make some students feel anxious (Ng, 2007, p.3). In an online language class, the pressure to quickly respond may result in students making language errors (Yamada, 2009) as well, which could further exacerbate anxiety.

Finally, as in the case of on-campus, F2F lessons, students who are engaged in SOL attend scheduled classes. In virtue of having a set schedule, the skills crucial to successful AOL such as increased self-direction and time-management are less pertinent. This being said, self-discipline could nevertheless be argued to be important in SOL because students have to learn to cope with (unexpected) distractions in their immediate environment (such as family members and pets) and not get lured into using social media. Additionally, when facing internet connection issues, students need to engage in solution-oriented behavior so as not to significantly miss out on learning. Students also have to monitor their holistic wellbeing to a greater extent in OL in terms of limiting adverse effects from lengthy screen time and finding ways to socially interact with their peers.

### ***2.3 Emotions in Learning***

As discussed above, when a student transitions to an OL environment, they will experience a role adjustment process, and this role adjustment process generally instigates emotions. In a situation that is “perceived as unfamiliar and challenging, and in addition is perceived of relevance to the learner, more intense emotions arise and these may range from highly positive to highly negative (i.e., from high levels



of excitement to high levels of anxiety towards the new challenge)” (Wosnitza & Volet (2005, p. 451). It is fair to assume that students perceived the COVID-19-induced shift to OL as highly unfamiliar and challenging, as well as highly relevant to their educational experience, due to its impact on a multitude of areas, from daily learning routines to longer-term learning goals.

A central reason why a thoughtful consideration and further exploration of emotions is of great magnitude is because emotions can generate subsequent actions which “may range from a determination to invest mental energy in the learning process to the adoption of coping strategies to protect well-being and survive the challenge” (Wosnitza & Volet, 2005, p. 451). Experiencing positive emotions in SOL activities can increase students’ participation (D’Errico et al., 2016). Even emotions commonly identified as negative can help one adapt to or persist in uncertain situations; “anxiety alerts us to potential dangers, sadness is associated with preventing loss, loneliness promotes social interaction by motivating us to regain connections with other people, and anger is useful in removing obstacles thereby restoring pursuit of an important goal” (MacIntyre et al., 2020, p. 5). Naturally, prolonged experiences of negative emotions can lead students to consider dropping out of their studies (Zembylas, 2008). In order to limit negative impacts on learning experiences, it is crucial to uncover the specific sources of emotions such as the task, technology, self, or other people because each demand different interventions (Wosnitza & Volet, 2005).

Although the current study was not explicitly designed to investigate language learning in online settings, it was deemed important to situate it within a foreign language learning context because such classrooms are notorious for negative emotions. In Resnik and Dewaele’s (2021) research undertaken during the COVID-19 pandemic which compared language students’ perceptions of EOL and F2F classes, lower levels of both positive and negative emotions were discovered in the former setting. Social aspects affecting students’ enjoyment such as experiencing less interaction and not getting to know their peers and teachers well were what they reported missing the most. Similarly, students in Maican and Cocoradă’s (2021) study reported negative emotions with respect to a lack of interaction with peers and teachers. They also expressed concern about their language progress. Significantly reduced moments for interaction was indeed a common antecedent of boredom in Derakhshan et al.’s (2021), p. 8) study, and students “frequently spoke about their desire to talk face-to-face again in a physical class, and how seeing their classmates in person can lead to more genuine interaction”. These recent studies point towards a possible role adjustment in that when shifting to EOL, students commonly experience differences in the types and amounts of social interactions which may adversely impact their emotions and behaviors.

Therefore, this study focuses on the following research questions:

- *What kind of role adjustments did students experience during the transition to emergency online learning? What emotions were associated with these experiences?*
- *What are the implications of these experiences for online learning and teaching?*



### 3 Methodology

Data were collected for the purpose of documenting and exploring students' socio-emotional experiences in the COVID-19-induced emergency transition to OL. The first paper resulting from this project focuses on the types and functions of students' interpersonal interactions in synchronous online lessons (Alger & Eyckmans, 2022). The aim of the present chapter is to examine students' process of role adjustment from 'learner' to 'online learner' in an EOL context.

#### 3.1 *Context and Participants*

In February 2020, a total of 75 students were enrolled on an English vocabulary course at a large university in Belgium. Three official languages are spoken in Belgium: Dutch in Flanders (the location of the present study), French in Wallonia, and German in a small part of Wallonia in the east. In Flemish-medium education, French is introduced in year 5 of primary school and is subsequently the first compulsory foreign language at secondary school, with English being taught as a second foreign language from age 12 (Mettewie & Van Mensel, 2020, p. 4). English is often considered a lingua franca in contexts of higher education.

The course in question is offered in the Applied Languages Bachelor program and has a duration of 12 weeks (with one 1-h lesson scheduled per group per week). The aim of the course is to systematically expand students' vocabulary through a combination of collaborative and independent tasks. The first 5 weeks of the course took place as planned on campus in F2F lessons, with the cohort divided into 4 smaller groups. On 13th March, all teaching activities with physical attendance of students were suspended due to the outbreak of the coronavirus. In place of the scheduled lessons, materials and independent study tasks were uploaded to the university's OL platform in weeks 6–9. Online synchronous lessons were offered in the final 3 weeks of the course via the web-conferencing tool Bongo Virtual Classrooms. While the teacher used a webcam and audio throughout the lessons, students were asked to use the text-based chat tool as the primary means to communicate with the teacher and with each other to avoid the potential chaos of overlapping audio. Furthermore, as only a limited number of student cameras could be simultaneously shared, the teacher felt it more fair for all students to be in the same condition (i.e. cameras turned off). In this study, EOL thus refers to students' experiences of a higher education course which was implemented asynchronously (independent activities) and synchronously (one-way video of the teacher, mostly one-way audio, and written chat messaging) online from March to May 2020. Students likely perceived this shift to EOL as challenging because they had expected the degree program to be largely delivered through on-campus, F2F classes (albeit with some out-of-class tasks e.g. short essays and self-tests to be completed and/or submitted via the university's OL platform).

In the first week of online synchronous lessons, all four groups were asked to join simultaneously. The purpose of this lesson was to check up on how students were coping with the asynchronous learning tasks and to discuss possible solutions to the tasks as well as logistics for the exam. In the second week, the lesson consisted of a vocabulary revision game based on the British TV gameshow *Pointless*. Upon hearing each quiz question asked by the teacher, students were put into breakout rooms in small groups to recall target words. They were then asked to present their answers in the main room. In the third and final week, students had the opportunity to take a mock exam. The aim of the lesson was a test-run not only for students, but also for the teacher to resolve any technical difficulties.

Students who had attended at least one of the three online synchronous lessons (59 out of 75 students) were contacted by email after the course and end-of-term exam had been completed in an attempt to reduce social desirability bias and so as not to add to students' stress during this difficult time. Only these 59 students were contacted due to the focus of the former study (see Sect. 4). The email contained a link to a series of broad reflection questions on Google Forms which sought to gain insights on students' experiences of the transition to OL (see Sect. 4.2). The response rate was 67%. The 40 students who voluntarily answered the questions comprised the final participants for the study. All students gave informed consent for their data to be analyzed and reported for academic research purposes in anonymized form.

At this point, it is important to mention that the first author was the teacher of the course. Having a dual role of teacher and researcher poses challenges such as personal involvement clouding judgements and leading to biased assumptions. To help counter this negative effect, the second author who was not part of the course was involved in the analysis (see Sect. 4.3). Furthermore, it could be seen as beneficial that the first author was part of the context as this offered an insider's perspective.

### 3.2 *Data Collection*

While a validated instrument (Garrison et al., 2004) exists for investigating novice online learners' role adjustment, we decided not to use it for two reasons. Firstly, we anticipated that Likert-scale questions such as "online or web-based communication is an excellent medium for social interaction" would provoke highly negative reactions. After all, the context of this study is an abrupt, forced mid-semester move to OL, rather than a planned (and potentially chosen) learning experience. Therefore, it is likely that students would rate OL as much worse than F2F. Indeed, emerging research documenting the COVID-19 education experience has generally found that "when resistant participants are moved from the classroom to online, the evaluations are less than positive" (Garris & Fleck, 2020, p. 17). Secondly, as the transition to OL happened under 'extraordinary' circumstances, an exploratory, qualitative approach with "broad open questions" (Brown, 2009) was deemed most appropriate to solicit a wide range of potential responses and also to capture unexpected

phenomena (Meulenbroeks, 2020). Such an approach “leaves all the thinking to the respondents” (Brown, 2009, p. 204).

Students’ responses to the first five of a total of 11 open-ended reflection questions comprise the data for this study:

- *When you found out that learning would take place online, what were your first thoughts and/or emotions?*
- *How did you experience the sudden shift to online learning?*
- *What made the transition to online learning easier and/or more difficult for you?*
- *Which aspects of online learning did you find surprisingly positive?*
- *Which aspects of online learning did you particularly struggle with?*

We regarded the above questions as a suitable means for collecting and analyzing data on the role adjustment process and associated emotions because they provide an opportunity for students to demonstrate “identification of things that were unexpected or new, and the response to that newness” (Cleveland-Innes et al., 2007, p. 8). The remaining six questions focused on types and functions of social interactions, and were analyzed as part of the first paper (Alger & Eyckmans, 2022).

### 3.3 Data Analysis

#### 3.3.1 Coding: Role Adjustment

The data resulted in a corpus of 6477 words (an average of around 160 words per student). Data analysis, which was performed manually, was an ongoing iterative process which involved organization, reflection, and coding. The specific steps we took during the data analysis are described as follows: first, the data were saved into a Microsoft excel sheet and arranged by student (i.e. student 1’s answers to the five reflection questions were grouped together to form an entity but the boundaries between responses to each of the five questions were clearly marked; see Appendix 1). Next, the first author became familiarized with the data through repeated reading. For the coding itself, a deductive set of codes from Cleveland-Innes et al.’s (2007) research on role adjustment in AOL environments (namely: interaction, instructor role, self-identity, course design, and technology) were used as the initial basis. However, due to the present study’s emergency online learning context, we were cognizant that an inductive approach was also necessary to further refine the codes and to allow for the creation of new codes. The authors discussed the proposed final codes, after which the second author performed independent coding of 25% of the data. The number of occurrences for which the coding differed between the raters was marginal (see Appendix 1). The first coder then continued to code the remaining 75% of the data. Next, the second author second-coded the same data, adding comments and disagreements with any of the first codes. Penultimately, the first author reviewed the second author’s work, and finally, a negotiated agreement process was undertaken to resolve any discrepancies. Regarding the unit of analysis,

it was decided that the theme would be used because “themes are not bound by grammatical units such as word, sentence or paragraph but rather they refer to a cluster of words with different meaning or connotation that, taken together, refer to some theme or issue” (Weber, 1990, p. 37). This enabled us to break down sentences into distinct themes and thus avoided the difficulty involved in determining which category is dominant when sentences are used as the unit of analysis. Representative examples of students’ comments for each role adjustment category and associated emotions are presented in Appendix 2.

### 3.3.2 Coding: Emotions

After the coding of specific areas of role adjustment described above, the data were analyzed from the emotional perspective. We were interested to see whether students explicitly or implicitly revealed their emotions when identifying aspects of the role adjustment process. Unlike specific, targeted instruments to investigate achievement emotions (Pekrun et al., 2002) or foreign language anxiety and enjoyment (Dewaele & MacIntyre, 2014), our broad open-response questions very much depended on students’ willingness and desire to disclose their emotions.

As our data contained several discrete emotion words, we needed to find a manageable way to identify patterns and meaningfully condense the data. Like Bielak and Mystkowska-Wiertelak (2020), we (1) used Rowe et al.’s (2014) scheme to assign less prototypical emotion labels to the basic categories, (2) consulted Pekrun et al.’s (2002) list of academic emotions, and (3) also used our own data to establish the final basic emotion categories. For example, due to the greater frequency of ‘frustration’ in our data, we used this as a basic emotion category instead of Rowe et al.’s and Pekrun et al.’s (2002) ‘anger’. Table 1 presents the basic emotions we identified in students’ responses. So as not to dilute or oversimplify students’ emotional experiences, we were open to assigning more than one emotion to each response. For example, the following verbatim response coded as ‘course’ for role adjustment contained both the emotions relief and anxiety: “Relieved that we were not supposed to do everything with self-study, but still a bit anxious about how everything would work. I was also a bit scared that we would get less language-input in online courses and that we would therefor advance less.” (Appendix 2)

## 4 Results and Discussion

The primary aim of this study was to explore students’ adjustment to the role of online learner in an EOL context and to identify the emotions associated with specific areas of adjustment. By examining the experiences that students expressed in their responses to reflection questions, we were able to better understand which areas signaled the most significant adjustments (i.e. aspects which students

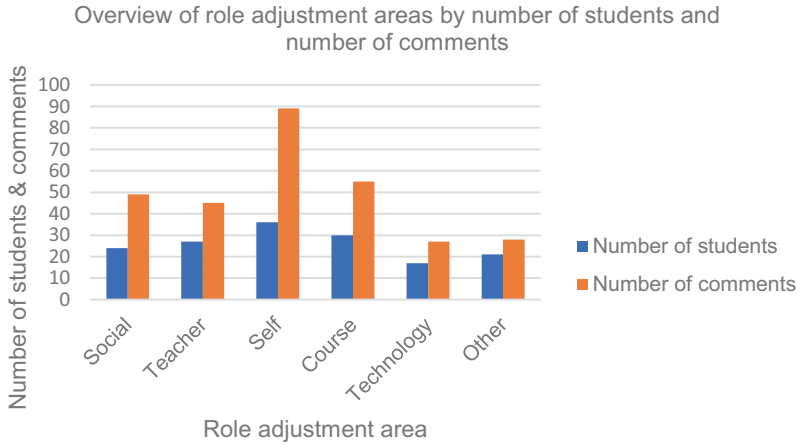
**Table 1** Basic positive and negative emotions (shown in bold) followed by explicit examples from our data and representative verbatim quotations of implicit emotions (shown in italics)

Positive emotions	Negative emotions
<b>Enjoyment:</b> Enjoyed, liked, loved, happy, nice, fun, <i>“you could do anything just the way you wanted to”</i> .	<b>Anxiety:</b> Anxious, fear, afraid, scared, terrified, worried, stressed, struggled, problem, overwhelming, very difficult, <i>“the huge work load, it never ended. We had to do so much on our own that it was difficult at times to do it all.”</i>
<b>Interest:</b> <i>“I was eager to discover new ways of learning.”; “I was curious to see how online learning would play out, since I feel like some classes could perfectly be given online.”</i>	<b>Sadness:</b> Sad, lonely/loneliness, missed, loss, discouraged, <i>“I also experienced some difficulties because I was much more alone then before.”</i>
<b>Gratitude:</b> Appreciated, <i>“professors were overall quick to send reassuring emails”;</i> <i>“our teachers really helped us through it.”</i>	<b>Uncertainty:</b> Uncertain, unsure, confusing, <i>“I couldn’t imagine how a vocabulary course could be given online”</i>
<b>Relief:</b> Relieved, so glad; <i>“I didn’t have to go to class, which was a huge time saver. I was much more well rested since i could sleep in.”</i>	<b>Frustration:</b> Frustrating, don’t like, <i>“some teachers thought they had complete freedom to organise classes/put materials online whenever they wanted to, which was very unpractical for us.”</i>
<b>Pride:</b> <i>“Also for speaking skills, working in the small groups really gave me the feeling I was making some progress.”</i>	<b>Shame:</b> <i>“I spent way too much time on useless details. Consequently, I fell behind with all the courses.”</i>
<b>Surprise:</b> Surprised	<b>Shock:</b> Shocked, <i>“I did not expect that we would have to shift so quickly to online lessons.”</i>
	<b>Boredom:</b> Monotonous, <i>“the monotony of everyday life.”</i>

emphasized). We were also able to see which adjustments induced either positive or negative emotions, as well as which adjustments were discussed in a neutral way.

All 40 students depicted several role adjustment experiences in their responses, with the representative examples in the sections below being reported as verbatim. A total of 293 comments relating to the adjustment process were identified, meaning that on average, each student mentioned seven specific experiences. Each comment was assigned one of six themes indicating areas of role adjustment: social, teacher, self, course, technology, and other (i.e. adjustments which were not deemed as immediately belonging to the preceding five themes; see Sect. 5.6). These were further divided into sub-themes to aid comparison. Figure 1 provides an overview of the role adjustment areas by the number of students and the number of comments. For example, students most commonly experienced a role adjustment in ‘self’ (36/40), and the high number of specific comments (89) suggests that many students mentioned this more than once.

It is also important to note that, in addition to the 293 comments, 13 comments did not receive any role adjustment code. Some of these comments expressed significant (usually negative) emotional reactions (“not excited, not motivated”; “I wasn’t too glad”) but they were not related to a specific role adjustment experience.



**Fig. 1** Overview of role adjustment areas by number of students and number of comments

Other comments conveyed information about the transition to OL as a whole and often included the vague pronoun ‘it’ (e.g. “I knew *it* would be harder than in real life”). In the absence of further elaboration, we felt it was not possible to assign a code to such comments; i.e. does the student mean that interaction would be harder online (social), or that organizing one’s learning would be more difficult (self), or that changes in course delivery would pose a challenge? Many of these comments were in response to the first question, which asked students about their ‘first thoughts and/or emotions’ when they found out that learning would take place online. Furthermore, five comments referred to generic experiences of the vocabulary course, and we felt that they also did not indicate evidence of an adjustment process (for example: “But especially concerning vocabulary, I guess it was that we were not really obligated to study during the year (except if you wanted to participate and do well in the weekly quizzes) so I had to study everything in the few days before the exam.”). While these unclear comments could have been avoided had we had time to conduct pilot testing and validation, or they could have potentially been resolved had we decided to conduct member checking, in the majority of cases (293/306, 96%) we were able to assign one of the six distinct role adjustment themes.

As 34 of the 293 comments contained more than one emotion, a total of 331 emotion codes were assigned. Comments were associated with 13 basic emotions: six positive ones (enjoyment, relief, pride, interest, surprise, and gratitude) and seven negative ones (anxiety, uncertainty, sadness, anger, boredom, shame, and shock). 21% of the comments were coded as expressing positive emotion, while double this percentage (42%) were coded as negative. In just over a third of the comments (37%), we were not able to identify either an explicit or implicit emotion, so these were coded as neutral. However, we noted which of the five questions students were responding to in order to get an idea of how to interpret these answers.

For example, out of these 121 neutral comments, 43 were in response to the questions containing the words “easier” or “positive”, while 50 were in response to the questions with the words “more difficult” or “struggle”.

Figure 2 provides an overview of the role adjustment areas and emotions contained in students’ responses. It clearly illustrates some of the core findings which will be expounded on in the following sections. For example, sadness was overwhelmingly associated with social adjustments. In terms of adjustments to the teacher’s role, gratitude was the most frequently expressed emotion, but frustration was also most frequently linked to this area of adjustment. Despite technology being referred to the least number of times (27 comments), it appeared to be the second largest cause of frustration. While adjustments to the self – a theme described by almost every student (36/40) – were heavily associated with anxiety and identified as particularly challenging, this area was also the greatest source of enjoyment. The emotions of relief, interest, pride, surprise, shock, boredom, and shame were very infrequent.

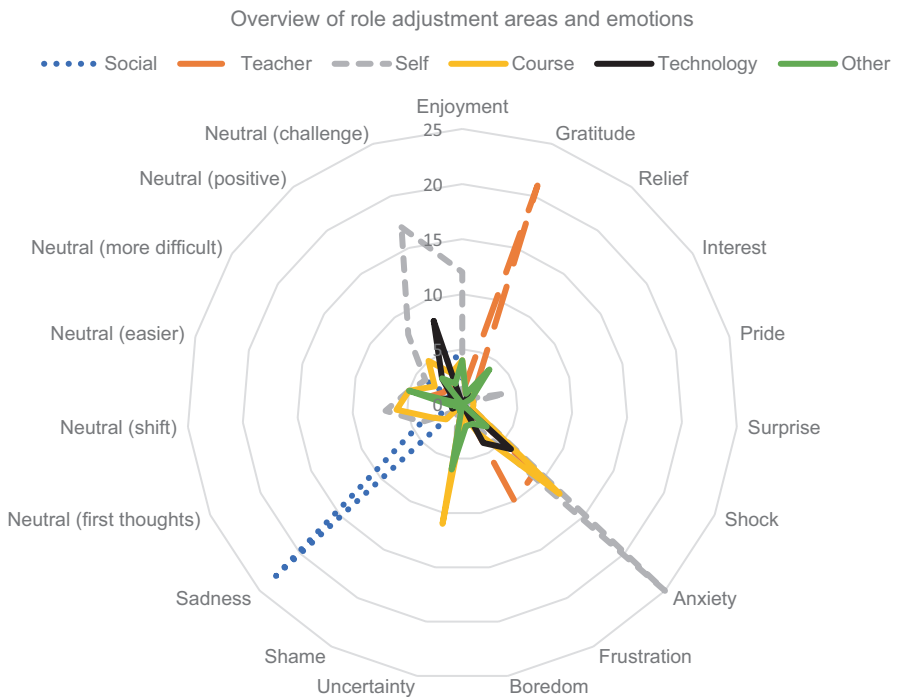


Fig. 2 Overview of role adjustment areas and emotions

## 4.1 Social

Twenty-four students mentioned a social adjustment at least once. The sub-theme with the most comments (26) included issues such as not being able to see friends and a lack of social contact, interaction, and/or connection (“I was very worried about the prospect of a lack of social contact”). A closely related sub-theme contained 11 comments which indicated a comparison between OL and F2F classes, including the constraints of online interaction and a general yearning for on campus lessons. The most commonly cited emotion within these two sub-themes was sadness, indicated by lexical items such as “miss”, “loss”, and “loneliness”. Many students either explicitly commented or implied that despite having opportunities to interact real-time with peers and teachers in SOL, “online will never feel the same”. For example, students were able to see their friends’ presence but were “not really able to converse with them like you did in class”. Even though they were “lucky to have the internet”, it “still felt as if everyone was on their own”. They missed “normal discussions” and “real conversations” in F2F classes, suggesting that even SOL conditions may fail to socially and emotionally satisfy students. These admittedly anticipated findings support what was found in Besser et al.’s (2020) study; one of the largest differences detected between students’ assessments of F2F learning and SOL was for reports of loneliness in SOL (p. 14). As also observed by teachers in Whittle et al.’s (2020) study, the “sudden loss of classroom social engagement” due to EOL was clearly an isolating experience for students (p. 317). Indeed, several students in our study commented that social isolation made studying “harder”, with two students specifically linking it to a decrease in motivation. Aguilera-Hermida (2020) examined the motivation of 270 U.S. college students before and after the COVID-19 stay-at-home order with factors including interaction with peers and teachers, interest in class topics, completing schoolwork and “hanging out (eating, talking, studying, etc.)” and found that students were statistically significantly more motivated in the former time condition.

In contrast, another sub-theme grouped together the experiences of three students who signaled social affordances of SOL. All three students expressed the emotion of relief (or which could also be interpreted as reduced anxiety) because it was “less big a step to contact a teacher”, they did not “feel as much pressure as in class” to give correct answers, and it was “less stressful to give presentations online instead of in real life for a full audience”. These comments suggest individual differences perhaps relating to introversion.

Interestingly, 7 students emphasised aspects which stayed the same or things that they could still do such as seeing each other (albeit on screen) (‘we still saw each other and we could still ask questions directly to our peers or the teachers’), thus indicating little to no role adjustment in some social areas. Half of these comments were associated with enjoyment, for example, “I also liked online ‘live’ lessons, because then it felt more as if we were really in class. Hearing and seeing the teacher was really nice then.”



## 4.2 *Teacher*

Students' identification of phenomena that were "unexpected or new, and the response to that newness" (Cleveland-Innes et al., 2007, p. 8) with regard to their teacher(s) were mostly found in the answers to the two questions about things that made the transition "easier" and that made OL "surprisingly positive". Just over half of all students' (21) responses indicated (additional) teacher support, and/or illustrated the (increased) empathy shown by teachers during the initial transition to OL. While in some cases it could be argued that the teachers' behavior described by students was not new – i.e. teachers may have been equally as empathetic in pre-corona times – in many cases students talked about the "extra efforts" made by teachers and the "stronger connection" they felt towards them, with 19 comments being associated with the emotion of gratitude. In addition to gratitude, one student's comment also expressed enjoyment, saying that they "liked the video chats" where the teacher "acknowledged the difficulties we are all going through, and being able to see a teacher again after a long time". Some students provided information on how teachers' communication impacted their emotions and wellbeing, for example, indicating direct positive consequences; "some teachers really took it upon themselves to help in the best way possible which allowed a more open communication with them", "the more easy information we got from our teachers, the better. It was nice to not feel left alone, but cared about". It seemed that some students expected chaos and to have to "teach themselves everything", but the teacher's actions left them positively surprised or relieved; "I was also very happy that the professor...was willing to make an effort to still teach us stuff and didn't just abandon us"; the transition was "easier than expected, everything was explained really well". Only one comment contained a negative emotion; "I feel like some teachers did a really great job, but with others I felt a little on my own."

All in all, these comments contrast with a frequently mentioned observation from research on planned AOL environments; namely, that students do not get to know their teachers (Cleveland-Innes et al., 2007, p. 8). Interestingly, in a study conducted in the COVID-19 context, despite students having EFL classes in the term before courses were moved online, they nevertheless commented on not "being able to get to know their teachers" (Resnik & Dewaele, 2021, p. 28) even in SOL environments. This all points towards the important social role that teachers play in garnering a sense of community in online conditions (see Richardson & Lowenthal, 2017 for a review of the literature on teacher's social presence), with Besser et al.'s (2020) recent study uncovering more positive reactions and learning adaptability of students who reported greater feelings of mattering and belongingness.

Another sub-theme mentioned by 4 students was their observation of teachers adapting to the OL setting. One particularly interesting comment hinted at the uncertainty caused by not having an experienced role model to follow in a new learning environment; "it was weird because the professors also didn't really know what to do". Students' perceptions of teacher confidence with the pandemic-induced transition to OL are important because they have been found to positively predict

factors such as enjoyment, interest, and learning (Garris & Fleck, 2020). Similarly, teacher quality, course design, and prompt feedback can positively impact students' satisfaction which in turn may positively impact students' performance (Gopal et al., 2021). Daumiller et al.'s study (2021) which explored the attitudes of 80 teachers from German universities towards the emergency shift to OL found that reports of higher perceived threat were positively associated with burnout levels and negatively related to student evaluations of teaching quality. An explanation for this relationship is that when a teacher perceives OL as threatening, they might decide to employ "safer (more controllable) and less resource-intensive passive learning activities instead of more constructive and interactive learning activities" (p. 3), by, for example, implementing more asynchronous than synchronous teaching. However, as Bork and Rucks-Ahidiana's (2013) research (see Sect. 2.1) elucidates, when teachers' and students' role-related expectations are misaligned, i.e., if students expect teachers to provide motivation-boosting and engaging online lessons but learn that they are instead expected to carry out independent tasks asynchronously, tensions are likely to grow which may ultimately impact learning.

Following on from this, a final sub-theme highlighted by 13 students grouped together teachers' actions that generated the negative emotions of frustration (9 comments) and anxiety (9 comments), with 3 comments being neutrally coded as "more difficult" or "challenging". Whereas some students commented on the "lack of good instructions and communication" and the consequent feeling of being "left behind", others emphasized communication overload; "some teachers thought they had complete freedom to organise classes/put materials online whenever they wanted to, which was very unpractical for us"; "the flood of emails...was quite overwhelming", and still others were clearly upset at teachers' unexpected changes in plans; "the first 2 weeks were great, till some professors decided to turn their classes to self-study courses and gave us 3x more work than a normal on-campus class." Again, these misalignments of role-related expectations have been documented even in planned AOL, with a student in Cleveland-Innes et al.'s (2007) study commenting that "a little more input and guidance from the instructor might have removed some anxiety and stimulated some more interaction on my part" (p. 9).

### 4.3 *Self*

Almost all students (36/40) mentioned an adjustment to 'self' learning attributes and strategies, such as self-regulation, self-efficacy, and self-discipline. Unsurprisingly, students generally saw these adjustments as a challenge, with the most frequently mentioned emotion being anxiety. Many students commented on "having to do everything on my own all of a sudden" and thus perceived a greater responsibility for understanding the material (in line with research on planned AOL), with some clearly fearing failure ("I was terrified that this would endanger my grades"). They also found it difficult to "keep up" ("I had a tendency to postpone tasks"; "I spent way too much time on useless details") and "build up a new routine"

(“it’s sometimes harder to organize yourself since without classes you have to be more proactive in taking time for each task”). In a sub-theme entitled ‘study/life balance’, seven students said they struggled to achieve this.

However, another sub-theme also documented across recent research emerged. Several students (23) highlighted the positives regarding the increased flexibility and freedom of OL, with 11 comments being associated with enjoyment. Interestingly, two students explicitly referred to a double-edged sword; it was positive that “all information is readily available and that you can watch videos/powerpoints again. However, this also resulted in a feeling that I was never done studying”, a feeling also mirrored in a self-identified perfectionist’s comment; “I could always study some more.” In contrast, one student simply commented that they “quickly got used to the new routine”. These comments reveal individual differences in students’ adaptation to EOL, a specific focus of Biwer et al.’s (2021) and Besser et al.’s (2020) research.

#### 4.4 Course

Students’ perceptions of adjustments relating to course delivery were quite diverse, and despite these 55 comments by 30 students containing the widest range of emotions, there was a greater frequency of negative emotions. Some of the comments were in response to the first question enquiring about students’ first thoughts. Within these comments, some students fearfully anticipated that OL would “endanger the quality of the lessons”. Another student admitted that their language “deteriorated significantly” due to the course being delivered online, and that it was not a “fitting medium in Applied Linguistics, because learning a language is all about interaction”, thus mirroring the findings from Maican and Cocoradă’s (2021) study. Others expressed feelings of uncertainty such as “wondering whether live lessons would still take place” and being “concerned about the methods that would be used by the professor, because I didn’t know how the classes would be taught”. Indeed, as one student explained, “all courses had different ways of giving lessons: sometimes live lessons, sometimes just powerpoints, sometimes we had to submit exercises...”. This same student expressed a preference for “a ‘normal’ setting in which the students have their syllabuses and the teacher gives us all the information”, so the adjustment to course delivery must have been quite significant. Aguilera-Hermida’s (2020) study not only found that students had a stronger preference for F2F than for OL, it also revealed that students who preferred F2F struggled with adapting to OL and had lower cognitive engagement. All in all, these observations echo findings from Espino et al.’s (2021) study, in which anxiety between the instructional format, focus, and workload were “strongly connected, indicative of the difficulties faced by students to maintain focus and balance assignments on learning activities while being at home” (p. 334).

## 4.5 *Technology*

Seventeen students alluded to issues with technology such as “wonky wi-fi connections”, general “computer problems”, social media distractions, “sitting and staring at my computer screen all day”, and new learning platforms being “a steaming pile of horse manure”. In contrast to the social affordances of SOL mentioned by three students (see Sect. 5.1), one student emphasized discomfort due to having to “type a message or switch on a microphone” to ask questions, which felt like a “barrier”. Students thus mostly experienced challenging moments and indicated negative emotions of frustration and anxiety, with computer problems causing “even more stress” in already taxing times. However, one student acknowledged that “it didn’t take more than two sessions to get the hang of” the new online environment, thus suggesting the rapid acceptance of and confidence with technology. In fact, comments from two students indicated little to no adjustment (“I thought it would be ok because we already used technology such as slides, Kahoot”), which highlights individual attitudinal differences. Aguilera-Hermida’s (2020) study found that students who used technology before EOL had a better perception of their capacity for academic success.

## 4.6 *Other*

Other areas of adjustment included learning in a different physical environment (mentioned by 9 students in mostly positive comments such as being “happy to be able to go home” and feeling “comfortable”), not commuting (mentioned by 8 students in mostly positive comments and often consequently linked to “feeling more rested” and it being “easier to focus on classes”), and personal ramifications (mentioned by 6 students in mostly negative comments such as “the monotonous days during lockdown”, which surely impacted focus and motivation, too).

## 5 **Conclusion and Pedagogical Implications**

This study sheds light on the experiences of 40 higher education EFL students in Belgium who, like millions of students around the world, were forced to undertake OL due to the coronavirus pandemic. It illuminates six areas in which students underwent a rapid role adjustment from learner to online learner, as well as various (emotional) reactions during this process. As this was an exploratory study based on the experiences of students at one university, findings cannot be generalized. However, the dual theoretical and analytical lens (role adjustment and emotions) within an EOL context provides a contribution to current EFL research and the

findings can be used to build on and inform larger studies designed to investigate more precise causes and effects.

Furthermore, it has to be noted that almost half of the students enrolled on the course did not participate in this study, so we were not able to reflect on their experiences. The reflection questions were only sent out to students who had attended at least one of the three synchronous classes, and this could be argued to be a rather limited experience for students to become conscious of the role adjustment process as well as to process their emotions. This being said, as the data constituted retrospective self-reports (which also have their limitations), students had had several weeks of exposure to EOL. While students were asked to limit their reflections to the vocabulary course, many students commented on the transition to online learning as a whole (evidenced by comments that referred to other courses and other teachers), and this potentially points towards the questionnaire serving a somewhat therapeutic opportunity. It also indicates how difficult it was for students to compartmentalize their experiences of EOL.

We also acknowledge that our beliefs, values, and experiences may have impacted the fine-grained coding decisions. Despite categorizing students' comments into distinct themes based on research on role adjustment so as to better understand the process, we recognize that there are no clear-cut boundaries because these are complex phenomena which often interrelate and interdepend on each other (Cleveland-Innes et al., 2007, pp. 9–11). Indeed, by elucidating students' positive surprises and particular struggles within and between these themes, and thereby uncovering some of the crucial elements that students themselves emphasized in their adjustment to the new role of online learner, we can hone in on specific actions that teachers can take to support their students.

Firstly, upon reflection of students' responses, it seems that the earliest priority is for teachers to establish immediate contact with their students as soon as EOL has been confirmed. It is likely that much of the initial uncertainty regarding course delivery can be avoided simply by sending a speedy, clear, and positive message to students, preferably via a familiar mode such as email. Teachers can briefly explain what they do know about how the course will be implemented online (for example, whether the original schedule will be followed and which specific platform will be used). If it is not yet clear how the course is to continue online, we would encourage teachers not to be afraid to admit their uncertainty and to assure students that when they 'see' them online, they will hopefully be equipped with more information to answer questions. If it is feasible, a program-wide email providing an overview of how each course will be delivered could be distributed to students from a team of teachers to ease any logistical scheduling worries. As technology is a real cause of (additional) stress, outline the actions that students should take if they are unable to attend SOL lessons or submit assignments due to technical issues. These first steps are crucial because students likely maintain their expectation that a teacher shows the way and may consequently perceive themselves to be facing the journey alone if directions are not quickly communicated.

Secondly, based on students' experiences in this study (see also Alger & Eyckmans, 2022), and as echoed throughout other COVID-19 research, social

losses were felt especially hard in the mid-semester emergency move online. Students simply missed the comfort of having their friends, peers, and teachers physically near. As many before have said, learning – especially language learning – is an inherently socio-emotional activity which depends on socially, emotionally, and cognitively satisfying interactions which may sometimes be quite subtle and can easily be taken for granted. Drawing on expert insights from Rapanta et al.'s (2020) study,

The underlying point here is that conventional face-to-face teaching arrangements often provide opportunities for communication (especially between students) that we, as teachers, do not always recognise and which may disappear with the move to online, e.g. students in face-to-face lectures tend to read subtle cues to get a sense of whether a new idea they are finding difficult is also proving difficult for their peers (e.g. 'Is it just me who's stupid, or is this idea really complicated?'). Students' spontaneous conversations before and after class are an underappreciated strength of face-to-face/on campus education. They supplement the formal or overt curriculum. (p. 928–929)

With this in mind, we must do all we can as educators to ensure that pandemic-induced social isolation does not lead to an experience of learning in isolation. Even if students are quiet at first in SOL lessons, we should persist in applying familiar engagement strategies such as pre- and post-class “little chats” to provide opportunities for students to continue the “normal discussions” they perhaps took for granted in F2F experiences. As now widely known, group work can be successfully facilitated through breakout rooms, and also enables students to have those “is this idea really complicated?” moments together. In this study, a recurring theme in students' positive experiences of SOL was the interactive group activities such as the ‘Pointless’ game. Several students commented that they particularly enjoyed working together in smaller groups in the breakout rooms and that they were able to informally talk to their peers within them “instead of the whole bongo group”. Emerging COVID-19 research is confirming the importance of limiting group size and using breakout rooms to maximize student engagement (e.g. Händel et al., 2022). Indeed, this engaging, low-stakes environment may have also boosted language development, evidenced in comments such as “for speaking skills, working in the small groups really gave me the feeling I was making some progress”. For a small number of students, communication anxiety appeared to be reduced during EOL. Since this study demonstrates that students in a chaotic EOL context are subjected to a role adjustment across many areas, it seems that some of the negatives can be offset by the social affordances of synchronous technological tools that enable students to feel the presence of their peers and their teacher. While the first author of the present study – also the teacher of the course – assigned asynchronous tasks in the first weeks of EOL as a means to ‘buy herself some time’, it must be said that, upon reflection, the SOL classes were undoubtedly the most professionally and interpersonally rewarding.

Furthermore, teachers can remind students that they will stay behind at the end of the lesson for those who would prefer to ask questions one-to-one; after all, students always have this option in F2F settings. In the same way as in F2F classes and planned OL environments, students can be heartily encouraged not to ‘sit quietly’

before, during, and after SOL lessons but to dare to initiate conversations themselves, not only between friends in private chats, but also with peers in the public chat, because they, too, are responsible for maintaining social presence (Aragon, 2010, p. 66). However, students need to know that they should not feel compelled to immediately reply if they are focused on a task, for example, and should learn to set their own boundaries.

Finally, students in this study enjoyed the experience of getting to know their teachers better online. Teachers' "extra efforts" and "personal touches" did not go unnoticed. In fact, they likely opened doors to more informal yet more humanising connections. While students' motivation is a notoriously complex factor, teachers' small acts of encouragement can make a positive difference, as can the creation of space to discuss students' fears (Aguilera-Hermida, 2020). Indeed, the findings from our first study illustrate the importance these students placed on having in-class opportunities to express their frustrations in a trusting environment (Alger & Eyckmans, 2022). Despite widely lauding teachers' emotional support, it appeared that many students still called for additional scaffolding. For example, while many "loved" having increased access to learning materials, it was easy to get lost and spend too long on "useless details". Although greater autonomy is required of online learners, we once again underline the important role of teachers in eliminating unnecessary stress and ensuring that such a sudden increase in autonomy is manageable.

We started to write up this chapter around a year after the outbreak of the coronavirus. Following in the steps of many other researchers, we felt the time was ripe to reflect on the transition to OL which took place in such exceptional circumstances. In realistic terms "there likely will be future public health and safety concerns" (Hodges & Fowler, 2020). This sobering thought reminds us as educators that it is paramount to become better aware of students' (emotional) experiences during their adjustment from the role of learner to (fully) online learner, because by doing so, we are better prepared to help them should a similar crisis strike in the future.

Furthermore, over another year later in the relative aftermath of the initial outbreak, our findings can be viewed in a different light; one that covers a wider spectrum. Globally, we are adapting to a "new normal" in (higher) education which tends to be realized through some form of blended learning. At our university in Belgium, the majority of courses have resumed with on-campus face-to-face teaching. However, some classes and several tasks are being implemented online, either asynchronously or synchronously, with the use of various technologies. Thus, the focus of our paper – role adjustment and emotions – not only remains pertinent but also prompts new questions. What does the process of adjusting from the role of (fully) online learner to the role of a learner engaged in blended learning entail? What emotions are experienced during this process? In what ways do these role adjustments and associated emotions impact learning? How can teachers make necessary adjustments to their own role in order to support their students in the best way possible? Reflecting on the results presented in this study, we postulate that the answers to these questions primarily revolve around people. The lion's share of



positive surprises and particular struggles faced by our students as well as the solutions we posit to teachers can all be traced back to phenomena that occur within and between people: clear and timely communication of logistical and course-related information, the provision of technological support, explicit guidance on how to manage learning, and, most importantly, the cultivation and maintenance of informal interactional moments and emotionally satisfying relations. While this is not new knowledge and has been demonstrated in decades of research on online learning, the COVID-19 pandemic has truly illuminated the constant importance of – and reignited the joy to be found within – human connections in any learning environment.

### Appendix 1: Example of Coding

Student 10’s response

1. I thought that it would be very difficult to motivate myself to study. I was very worried about the prospect of a lack of social contact. I was also wondering whether live lessons would still take place.
2. At the time, I just started working because I was afraid I’d fall behind on schedule. For some courses that really tried to make it work, it was not too hard. Those who just gave you a ppt and left you pretty much on your own were much harder.
3. I’m not the world’s most social person, so I think I did not miss being in a group for learning as much as other people. It was, however, much harder to quickly ask for more clarification on something, because in order to reach your classmates or teacher, you either had to type a message or switch on a microphone. That felt like a barrier.
4. When I had to give an answer, I did not feel as much pressure as in class to get it right.
5. I had an enormous problem trying to stay focused. In every lesson, I only managed to stay fully focused for half of it. The downside of working on a laptop is that you can very quickly open your social media.

Question	Theme	Role adjustment code	Emotion code	Reflections from second coder
1. When you found out that learning would take place online, what were your first thoughts and/or emotions?	<b>I thought that it would be very difficult to motivate myself to study</b>	<b>SELF</b> (autonomous learning)	<b>Anxiety</b> ('very difficult')	
1. When you found out that learning would take place online, what were your first thoughts and/or emotions?	<b>I was very worried about the prospect of a lack of social contact.</b>	<b>SOCIAL</b> (lack of social contact)	<b>Anxiety</b> ('very worried')	

(continued)



Question	Theme	Role adjustment code	Emotion code	Reflections from second coder
1. When you found out that learning would take place online, what were your first thoughts and/or emotions?	<b>I was also wondering whether live lessons would still take place.</b>	<b>COURSE</b> (comparison between F2F & OL/logistics)	<b>Uncertain</b> ( <i>'wondering'</i> )	
2. How did you experience the sudden shift to online learning?	<b>At the time, I just started working because I was afraid I'd fall behind on schedule.</b>	<b>SELF</b> (autonomous learning)	<b>Afraid</b> ( <i>'afraid'</i> )	
2. How did you experience the sudden shift to online learning?	<b>For some courses that really tried to make it work, it was not too hard.</b>	<b>TEACHER</b> (teacher support/flexibility)	<b>Neutral: shift</b>	Coded as Course and Neutral. After discussion with the first coder, it was decided that the code Teacher would be used because the 'some courses that tried to make it work' implies the teacher's actions.
2. How did you experience the sudden shift to online learning?	<b>Those who just gave you a ppt and left you pretty much on your own were much harder.</b>	<b>TEACHER</b> (communication)	<b>Anger</b> ( <i>'those...who just left you pretty much on your own'</i> )	Coded as Course & Neutral. After discussion with the first coder, it was decided that the code Teacher would be used due to a focus on the teacher's actions, and implicit Anger.
3. What made the transition to online learning easier and/or more difficult for you?	<b>I'm not the world's most social person, so I think I did not miss being in a group for learning as much as other people.</b>	<b>SOCIAL</b> (lack of social contact)	<b>Neutral: easier</b>	Coded as Self and Neutral. After discussion with the first coder, it was decided that the code Social would be used due to the emphasis on the social aspect of learning.

(continued)

Question	Theme	Role adjustment code	Emotion code	Reflections from second coder
<p>What made the transition to online learning easier and/or more difficult for you?</p>	<p><b>It was, however, much harder to quickly ask for more clarification on something, because in order to reach your classmates or teacher, you either had to type a message or switch on a microphone. That felt like a barrier.</b></p>	<p><b>TECHNOLOGY</b> (challenges)</p>	<p><b>Anxiety</b> (<i>'felt like a barrier'</i>)</p>	
<p>4. Which aspects of online learning did you find surprisingly positive?</p>	<p><b>When I had to give an answer, I did not feel as much pressure as in class to get it right.</b></p>	<p><b>SOCIAL</b> (positives of interacting online)</p>	<p><b>Relief</b> (<i>'did not feel as much pressure' = reduced anxiety</i>)</p>	
<p>5. Which aspects of online learning did you particularly struggle with?</p>	<p><b>I had an enormous problem trying to stay focused. In every lesson, I only managed to stay fully focused for half of it.</b></p>	<p><b>SELF</b> (autonomous learning: discipline, staying focused)</p>	<p><b>Anxiety</b> (<i>'enormous problem'</i>)  <b>[&amp; Boredom]</b> (<i>'stay fully focused'</i>)</p>	<p>A second emotion code was suggested: Boredom. After discussion with the first coder, Boredom was also added.</p>
<p>5. Which aspects of online learning did you particularly struggle with?</p>	<p><b>The downside of working on a laptop is that you can very quickly open your social media.</b></p>	<p><b>TECHNOLOGY</b> (challenges)</p>	<p><b>Neutral: challenge</b></p>	

## Appendix 2: Representative Examples of Students' Comments for Each Role Adjustment Category and Associated Emotions

<b>Category: SOCIAL   Sub-category: not seeing friends / lack of social interaction / lack of connection with peers / being alone</b>		
Student number	Comment	Emotion(s)
1	It also felt a lot more lonely that going to school and seeing all your friends.	Sadness (' <i>a lot more lonely</i> ')
2	I felt quite down. My university friends and I are very close and constantly motivate each other to perform well. Being away from them was very difficult.	Sadness (' <i>quite down</i> ')
6	fear for the lack of connection and communication with my peers	Anxiety (' <i>fear</i> ')
23	Lack of social contact with students and professors?	Neutral: challenge
26	Loss of real social connection with friends at university,	Sadness (' <i>loss</i> ')
<b>Category: SOCIAL   Sub-category: missing social aspects of F2F classes / comparison of F2F and OL / constraints of learning online</b>		
6	I still missed real conversations in class, but there were no other options at that time.	Sadness (' <i>missed</i> ')
19	Despite the online interaction with other students, it still feels very lonely.	Sadness (' <i>very lonely</i> ')
14	Sometimes I missed being able to talk to a teacher, especially in a very difficult course when I didn't understand everything right away.	Sadness (' <i>missed</i> ')
<b>Category: SOCIAL   Sub-category: fewer opportunities to find friends</b>		
22	not finding friends	Neutral: challenge
<b>Category: SOCIAL   Sub-category: positives of online interaction</b>		
10	When I had to give an answer, I did not feel as much pressure as in class to get it right	Relief (' <i>did not feel as much pressure</i> ' = <i>reduced anxiety</i> )
12	It was less stressful to give presentations online instead of in real life for a full audience	Relief (' <i>less stressful</i> ' = <i>reduced anxiety</i> )
<b>Category: SOCIAL   Sub-category: little to no adjustment, focusing on what stayed the same</b>		
5	we still saw each other and we could still ask questions directly to our peers or the teachers.	Neutral: first thoughts
8	I also liked online 'live' lessons, because then it felt more as if we were really in class. Hearing and seeing the teacher was really nice then.	Enjoyment (' <i>liked</i> ', ' <i>really nice</i> ')
<b>Category: TEACHER   Sub-category: (additional) teacher support / empathy / human dimension / flexibility</b>		
1	I feel like some teachers did a really great job, but with others I felt a little on my own.	Gratitude (' <i>really great job</i> ') & sadness (' <i>on my own</i> ') & anger: frustration (' <i>on my own</i> ')

(continued)

3	The teacher’s encouragement made it easier	Neutral: easier
4	The fact that many teachers and professors showed that they are only human after all made the online learning experience easier for me. Most of them were very caring and some even added a more personal touch to their online classes.	Gratitude ( <i>‘very caring’</i> )
32	I liked the video chats, where you acknowledged the difficulties we are all going through, and being able to see a teacher again after a long time.	Gratitude ( <i>‘acknowledged...’</i> ) & enjoyment ( <i>‘liked’</i> )
<b>Category: TEACHER   Sub-category: teachers adapting to OL</b>		
19	and I think most professors also became comfortable with online learning, which helped a lot	Relief ( <i>‘helped a lot’</i> )
28	It was weird because the professors also didn’t really know what to do.	Uncertain ( <i>‘weird...also didn’t know what to do’</i> )
33	All of this was new to them too, but we felt their support. Everyone was doing the best they could.	Gratitude ( <i>‘felt their support’</i> )
<b>Category: TEACHER   Sub-category: reduced communication / communication overload / changing plans</b>		
21	The first 2 weeks were great, till some professors decided to turn their classes to self-study courses and gave us 3x more work than a normal on-campus class.	Anger: frustration ( <i>‘gave us 3x more work’</i> )
25	I felt left behind because of the lack of communication in a lot of courses. So I would describe it as stressful and uncertain	Anxiety ( <i>‘stressful’</i> ) & uncertain ( <i>‘uncertain’</i> ) & anger: frustration ( <i>‘felt left behind’</i> )
39	The transition to online learning was difficult, because of all the chaos. We had many courses to keep up with and many professors tried to communicate with us about certain assignments and classes on Ufora. However, this happened all at once, so it was hard to find order in all the chaos	Anxiety ( <i>‘chaos’</i> )
<b>Category: SELF   Sub-category: study-life balance</b>		
5	therefore there was more time left to study or do other things (sometimes not related to school)	Neutral: positive
16	It was hard to divide my time into study time and free time	Neutral: shift
<b>Category: SELF   Sub-category: autonomous learning (negatives)</b>		
1	Processing a lot of the course by yourself.	Neutral: challenge
5	I felt like I had lost my “study rhythm” and I found it difficult to get an overview because I had to take into account so many different things at the same time: online classes, homework, deadlines and exams.	Anxiety ( <i>overwhelming</i> )
15	I don’t think the experience was too bad all together, it just demanded a lot of discipline.	Neutral: shift
30	I felt discouraged and wondered whether I’d be able to pass all of my courses	Sadness ( <i>‘discouraged’</i> ) & anxiety ( <i>‘wondered whether I’d be able to pass’</i> )

(continued)

37	I had a very difficult time to keep a fixed schedule, and a lot of the learning happened the days before the exams and not much happened beforehand.	Anxiety ( <i>'very difficult time'</i> )
<b>Category: SELF   Sub-category: autonomous learning (positives)</b>		
4	1. I absolutely loved the direct and easy access to the course materials.2. The fact that it was possible to watch a difficult class more than once was very useful.	Enjoyment ( <i>'absolutely loved'</i> )
14	The fact that for some courses you are free to choose when you watch the PowerPoints or the recordings.	Neutral: positive
16	I could choose to devote more time to one course and less to another.	Enjoyment ( <i>'I could choose'</i> )
<b>Category: SELF   Sub-category: little to no adjustment</b>		
33	I thought it would be more difficult to pay attention to an online class, e.g. on Bongo, but it was just as fun as on-campus classes	Enjoyment ( <i>'just as fun'</i> )
<b>Category: COURSE: comparison between F2F and OL organisation and delivery / comments related to course logistics</b>		
5	"In normal life", I sometimes find 3 hours in class too long. Fortunately, online classes hardly ever lasted 3 hours	Neutral: positive
8	I prefer a 'normal' setting in which the students have their syllabuses and the teacher gives us all the information.	Neutral: first thoughts
9	Relieved that we were not supposed to do everything with self-study, but still a bit anxious about how everything would work. I was also a bit scared that we would get less language-input in online courses and that we would therefor advance less.	Relief ( <i>'relieved'</i> ) & anxiety ( <i>'anxious', 'a bit scared'</i> )
15	I was wondering if we would have online classes for all our courses	Uncertain ( <i>'wondering'</i> )
21	Courses of which the lectures were cancelled were a struggle. I learn and remember new information better in class, from the lecturer's notes and the way they say them. Everything is a bit more monotonous online.	Anxiety ( <i>'struggle'</i> ) & boredom ( <i>'monotonous'</i> )
40	No more course specific days. -- for example [language] practice used to be on Tuesdays only, now deadlines of that course on Monday, Thursday, Friday, Saturday	Anger: frustration ( <i>more deadlines to meet</i> )
<b>Category: COURSE   Sub-category: little to no adjustment</b>		
34	The emotions I felt varied from course to course. For this course in particular, I didn't really feel worried or stressed. We had just finished the phonetics part of the course and I was quite confident that the speaking and vocabulary part would not really be affected by the online learning module. After all, I felt the main focus was on using our skills and perfecting them rather than learning new ones.	Neutral: first thoughts

(continued)

<b>Category: TECHNOLOGY   Internet connection, computer problems, non-acceptance of working with computers</b>		
2	I also really don't like working with computers, but now I did not have a choice which was quite frustrating at times.	Anger ('don't like', 'frustrating')
8	I was also scared that for example my Internet connection would not be good enough etc.	Anxiety ('scared')
26	I had a lot of problems with my computer and Wi-Fi, which caused even more stress	Anxiety ('stress')
<b>Category: TECHNOLOGY   Sub-category: little to no adjustment</b>		
27	I thought it would be ok because we already used technology such as slides, Kahoot, ...	Neutral: first thoughts
<b>Category: OTHER   Sub-category: Physical environment</b>		
8	The last thing I liked about online learning was the fact that I was at home, and could for example take a break by going for a walk, or even just lay on my bed (things we could not do on campus). I was studying in the comfort of my own house, so I could always go to the toilet, take something to eat or drink etc.	Enjoyment ('liked', 'comfort')
25	At first I was excited to be at home with my family. But only after one week I realised that it could be very stressful and I was confused a lot especially for not knowing how things would go on.	Interest ('excited') & anxiety ('very stressful') & uncertain ('confused')
<b>Category: OTHER   Sub-category: No commute</b>		
16	I didn't have to go to class, which was a huge time saver. I was much more well rested since i could sleep in.	Relief ('huge time saver', 'more rested')
26	It was easier because :I didn't have to travel from home to [city] and vice versa	Neutral: easier
<b>Category: OTHER   Sub-category: Personal ramifications</b>		
11	how will it affect our personal lives	Uncertain
30	The monotony of everyday life, not going outside, the uncertainty	Boredom ('monotony') & uncertain ('uncertainty')

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# Students' Perceptions of Digital Oral Skills Development in ESP University Students: Strengths and Weaknesses in Digital Communication in the COVID World



Jelena Bobkina and Elena Domínguez Romero

**Abstract** The present study draws from the need to face twenty-first-century Engineering students' lack of oral communication skills in digital environments. The existing deficiencies became evident during the months of COVID-19 lockdown in 2020, when most communication processes, both in academic and professional settings, involved the use of digital means. On this basis, the study aims at identifying ESP university students' self-reported strengths and weaknesses to build persuasive digital oral speeches using a self-assessment rubric that was specifically designed to evaluate their communication skills in digital environments. The rubric comprised 22 items distributed between five significant areas of knowledge: building communication skills (content/cognition and linguistic area), performing communication skills (physical and socio-emotional areas) and creating digital content skills (technical area). The results reveal that about 40% of the students considered their level of digital communication skills deficient, being the linguistic, socio-emotional and physical areas of communication the most affected ones. The ultimate intention of the study is to help students become aware of their command of oral skills in digital environments –their specific strengths and weaknesses– to help them thrive in both traditional and digital communication.

**Keywords** Oral skills · Persuasive speech · ESP · Digital communication · Engineering students

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## 1 Introduction

University graduates seeking employment in the engineering area of multinational corporations face the challenge of standing out in a highly competitive job market. Among the primary skills they must command are communication, teamwork, critical thinking, problem-solving, creativity, innovation, and digital competence (Chell & Dowling, 2013; Johnston, 2019; Kallinikou & Nicolaidou, 2019). According to Passaw and Passaw (2017), communication is considered one of the top skills in the engineering field, along with planning, time management, and problem-solving. The accreditation board for engineering and technology (henceforth, ABET) recognises the importance of communication, which is included among the ABET curriculum requirements (ABET, 2017). Employers demand technical knowledge and knowledge of emotional and social intelligence, with a crucial communication basis (Gruzdev et al., 2018; Kassim & Ali, 2010; Ortiz et al., 2016).

However, communication remains one of the skills engineering students struggle with most in the twenty-first century, often failing “to appreciate that written words, not just calculations, express engineering content” (Conrad, 2017, p. 191). Very few universities prepare their students to face the needs of today’s job market regarding the acquisition of oral communication skills. Engineering students reach the workforce with adequate solid skills specific to their field but lack the communication skills necessary to effectively navigate the many audiences and situations required by modern companies (Kassim & Ali, 2010; McBain et al., 2016).

The lack of communication skills among engineering students is also evident in digital oral communication. The existing deficiencies have become especially visible during lockdown months, when most of the communication processes, both in academic and professional settings, have involved the use of digital means (Bobkina & Domínguez, 2020). However, very little is known about students’ strengths and weaknesses in digital environments compared to traditional settings (Domínguez Romero & Bobkina, 2021a). Contrary to traditional communication, digital oral communication, be it synchronous (e.g., videoconferences) or asynchronous (e.g., recorded communication), has remained mostly unexplored. The few exceptions comprise studies on videoconferences (Crawford-Camicciottoli, 2015; Darics, 2020) and online videos (Burgoon et al., 2017; Domínguez Romero & Bobkina, 2021b; Luzón, 2019). Attempts have also been made to explore the nature of social interaction in online synchronous learning environments from the social learning theory perspective (Wei et al., 2012; Whiteside et al., 2017). To bridge the existing gap, this study sets out to identify ESP (English for Specific Purposes) university students’ perceptions of their command of oral skills in digital environments, specifically, their strengths and weaknesses to build persuasive digital oral speeches. Our ultimate aim has pedagogical implications: enhancing metacognitive awareness of their command of oral skills in digital environments—their specific strengths and weaknesses—to help them thrive in traditional and digital communication.

In this vein, the following research questions – focused on a particular case study carried out with 76 engineering students in our ESP classroom at the Polytechnic University of Madrid, Spain (henceforth, UPM)– were raised:

- What are our students' general perceptions about their command of digital oral skills?
- What are our students' specific perceptions about their strengths and weaknesses to build effective digital oral communication?

Following the theoretical framework section, we will describe the study's methodology and the results obtained to answer the questions raised in the study. The analysis of the results will lead us to conclusions pointing to the need to emphasise digital communication in professional and academic contexts, preparing students for the new communication reality led by technology.

## 2 Theoretical Framework

Oral competence allows humans to express themselves clearly and understandably, helping them participate in a democratic society and navigate life (Burke, 1973). This competence is closely related to the ability to adjust to multiple social and cultural aspects and contexts. Research carried out in recent years points to solid relations between social competence, acceptance and status, and oral competence (van der Wilt et al., 2016). Specifically, research demonstrates the central role of oral communication in learning across the curriculum (Alexander, 2018) and the need to help students develop a broad discursive 'repertoire'. Mercer (Mercer et al., 2017) advocates oral communication as a tool for humans to think together creatively and productively (Littleton & Mercer, 2013; Mercer & Hodgkinson, 2008). For Alexander (2012), oral communication is an essential skill for life and learning, so students have to learn not only provide relevant and focused answers but also pose their questions, use talk to narrate, explain, speculate, imagine, hypothesise, explore, evaluate, discuss, argue, reason and justify.

Andrew Wilkinson, the most outspoken advocate of oracy, defined this term as the development and application of a set of skills associated with effective oral communication. For Wilkinson, oracy is not a subject in itself, but rather a condition for learning in disciplines neglected in education for years (Wilkinson et al., 1965). In recent times, Alexander (2012) has reiterated the plea for oracy, arguing that the significance of oracy and its role in modern education cannot be underestimated. At present, oracy is gaining importance because of globalisation and digitalisation processes (Crockett et al., 2011; Kaldahl et al., 2019; White, 2013). Distant discussions, brainstorming, decision-making, and collaborative work lead to digital oral communication modes comprising video conferencing, video calling, or web conferencing rooms (Atkinson, 2017).

The paradigm shift in communication was especially evident during the COVID-19 lockdown, when most communication processes were digital. Recent

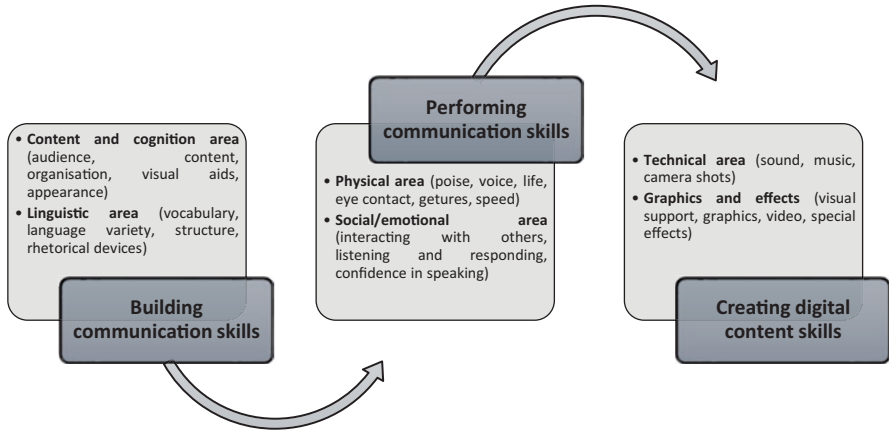
studies claim that the proliferation of digital oral communication is reshaping the quality and quantity of face-to-face communication, revolutionising communication in informal situations and formal contexts such as public speaking (Bobkina & Domínguez Romero, 2017; Drago, 2015; Jenkins, 2013; Misra et al., 2014; Przybylski & Weinstein, 2012). Some researchers point to the way technological wonders affect how we communicate orally: “from long-winded, flowery oratory to slickly produced speeches that can be tweeted or live-streamed” (Graveline, 2013, p. 22). Nevertheless, overly polished speakers lack authenticity and result in “soaring levels of public scepticism” (Graveline, 2013, p. 25), mainly when they focus too much on crafting highly tweetable speeches with pithy sentences designed to be sent out by audience members via Twitter (Anderson, 2018).

Based on the above, digital oral communication skills are essential for ESP university graduates in their future roles as citizens and professionals (Bobkina et al., 2020; De Grez et al., 2009; Heiman et al., 2012), although knowledge about developing digital oracy in language teaching is rather lopsided (Mercer et al., 2017). Oracy has been under scrutiny in traditional, face-to-face EFL/ESL settings (Bøhn, 2016). However, little is known about how oracy is conceptualised and assessed in digital oral environments. The debate is still open (Mercer et al., 2017), yet it is commonly accepted that technology has not replaced the need to carefully prepare speeches (Alias & Osman, 2015; Checa Romero, 2015; Iordache et al., 2017) despite offering some additional tools to facilitate the process (Graveline, 2013).

One of the most recent attempts to develop an oracy skills framework was undertaken by Neil Mercer, Paul Warwick and Ayesha Ahmed in 2014. They identified the skills needed to communicate effectively, isolating key components of spoken language and breaking them into four areas: physical (e.g., voice projection, gesture), linguistic (e.g., using appropriate vocabulary, choosing the correct register and language variety for the occasion), cognitive and social (e.g., organising content based on audience awareness) and emotional (e.g., managing group activity, taking an active role in collaborative problem solving) (Mercer et al. 2014b, p. 3).

This framework was further developed by Bobkina and Domínguez (2020), who adapted it for assessing digital oracy skills. As shown in Fig. 1, the adequate skills to be developed when building effective digital speech comprise building communication skills, performing communication skills, and creating digital content skills.

Building communication skills focuses on five content and cognition elements: audience, content, organisation, visual aids and appearance (Palmer, 2015). On the linguistic side, vocabulary, language, and rhetorical devices should be considered (Scott & Gaunt, 2019). Performance skills are crucial in building digital speeches (Dunbar et al., 2006) and have two dimensions: the physical comprises poise, voice, life, eye contact, gestures, and speed (Palmer, 2011); the socio-emotional includes working with others, listening and responding, and confidence in speaking for synchronous digital speech, restricted to confidence in speaking and speech anxiety in case of asynchronous speech. Digital content creation skills comprise developing and editing new and existing digital content, production of creative expressions, and



**Fig. 1** Aspects to be considered when building effective digital speeches. (Bobkina & Domínguez, 2020)

awareness of purpose, audience, and composition techniques (Iordache et al., 2017; van Deursen et al., 2014; van Dijk & van Deursen, 2014). Technical elements and special effects are also to be considered (Palmer, 2015).

### 3 Method

The extraordinary situation caused by the COVID-19 pandemic gave us the opportunity to collect our students' perceptions of their command of oral skills in digital environments as 100% of our communication activities were online. This was not the case before the pandemic when all our teaching practice was face-to-face. Drawing on a challenge-based learning methodology (Fidalgo et al., 2017; Nichols et al., 2016), students were asked to identify a challenge associated with the field of computer engineering and develop a mobile app start-up to address such a challenge. More specifically, they were asked to record 1-min video pitches to introduce their mobile app start-up idea. After extensive research on the technical aspects of the start-up, they presented their resulting mobile app in the form of a short video developed as part of a classroom competition allegedly intended to launch the best product on the market. Both recordings were shared and commented on through a virtual forum on the Moodle platform of the course. The students were also informed that the video recordings of the tasks would be anonymised and used only for research purposes and consented to participate in the study.

### 3.1 Participants

To examine students' perceptions of their command of digital oral skills in ESP context, a case study was carried out with a group of 76 students from the Higher Technical School of Computer Engineering of the UPM who were enrolled in the English for Professional and Academic Communication subject, throughout the second semester of the 2019–2020 academic year. As reflected in Table 1, the analysis comprises data from 76 students, 55 men and 21 women, with ages ranging from 21 to 28 years, all fourth-year students of Computer Engineering and Computer Engineering and Mathematics. All but 12 participants were native Spanish speakers whose English level ranged from B1 to C2, according to the CEFR (Council of Europe, 2001), although they must certify the B2 level at the end of the course. The evaluation of their oral skills represented 20% of their final grade and was based on a short elevator pitch (10%) and a traditional oral presentation (10%). Due to the COVID-19 lockdown, the traditional oral presentation in class was replaced by an asynchronous video presentation.

### 3.2 Materials and Instruments

Working in small groups of 2–3 students, the participants developed 28 video pitches to present the mobile applications resulting from their research projects. From a technical point of view, one of the requirements for the video pitches was the combination of the presenters' images with their PowerPoint slides. The themes of the research projects centred around the use of machine learning, artificial intelligence, virtual reality, emerging technologies or home intelligence systems (e. g., PlayLoud, a new musical platform for young musicians; Catchclo, an application to identify the clothing brand and its origin; uGlasses, a new gadget for blind people;

**Table 1** Participants

Factor		Frequency
Gender	Male	55 (72.4%)
	Female	21 (27.6%)
Age	21–23	34 (44.7%)
	24–26	37 (48.7%)
	<26	5 (6.6%)
Nationality	Spain	64 (84.2%)
	China	5 (6.6%)
	Romania	4 (5.3%)
	Greece	1 (1.3%)
	Bulgaria	1 (1.3%)
English level	B1	8 (10.5%)
	B2	60 (78.9%)
	C1-C2	8 (10.5%)

Mcard, the virtual card for the public transport; Hiper, a distributed computing system that divides the workload among users). The corresponding video presentations were part of a competition for the best start-up project based on a mobile application.

To explore our students' perceptions about their command of digital oral skills, we developed a self-assessment sheet for them to evaluate their ability to communicate in digital video environments: video pitches and video presentations (see Appendix A).

The first part of the self-assessment sheet aimed to collect quantitative data. As shown in Fig. 2, the evaluation criteria comprised 22 items distributed among three areas of digital oral skills: content/cognition and linguistic area, physical and socio-emotional area, and technical area. All items were assessed according to a four-point Likert scale ranging from 1 – inexperienced and insufficient – to 4 – exemplary, qualified, marked for excellence.

The second part of the self-assessment sheet aimed to collect qualitative data to complete the information extracted from the quantitative analysis and comprised a two-fold question: What are your strengths and weaknesses to build effective digital oral communication?

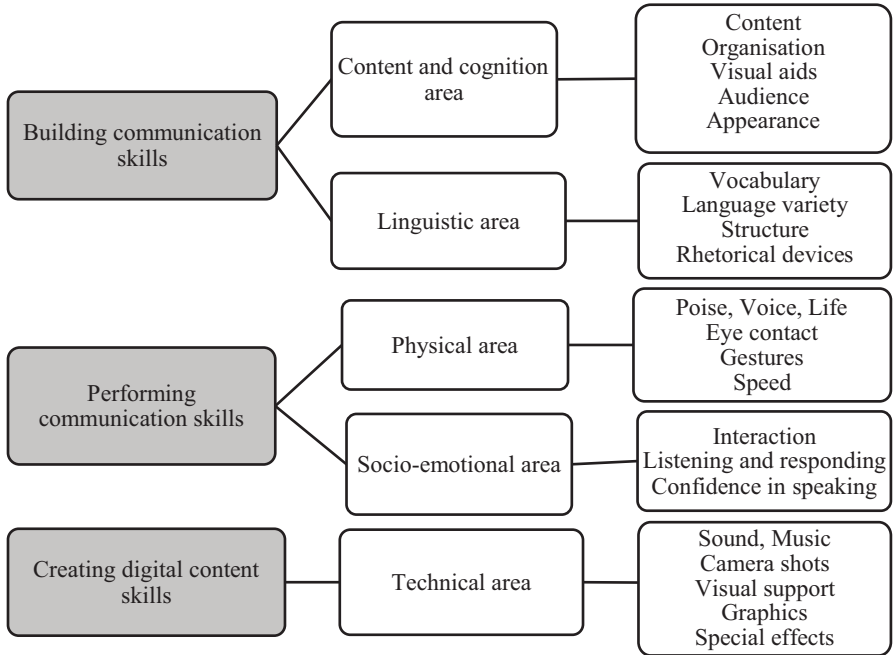


Fig. 2 Scoring criteria for grading digital oral skills. (Bobkina & Domínguez, 2020)



### 3.3 *Procedures*

The study was conducted over 15 weeks of classes during the second semester of the 2019–2020 academic year. At the beginning of the course, it was explained to the students that they would work in small groups of 2–3 students to create a mobile application aimed at developing and validating a business model in computer engineering; 20% of their final grade would be based on their participation in two oral activities meant to promote the final product of their research. The first activity consisted in creating a 60-s elevator pitch to publicize each groups' research proposal. The second activity consisted in preparing a 6–10-min oral presentation as part of an in-class start-up competition. Because of the COVID-19 lockdown, this activity was finally replaced by a synchronous online event, with students doing their presentations remotely.

The videos were shared and commented on through a virtual forum on the Moodle platform of the course. In addition, the final presentation was self-assessed by the students with the help of the assessment sheet created for this purpose. The information extracted from the self-assessment sheets was manually coded and processed with the help of the Statistical Package for the Social Sciences (SPSS version 25.00).

## 4 *Analysis of Results*

Following the structure of the self-assessment sheet, the first part of the analysis focuses on our students' perceptions about their command of digital oral skills. In contrast, the second part delves into their perceptions about their strengths and weaknesses in building effective digital oral communication.

### 4.1 *ESP University Students' Perceptions About Their Command of Digital Oral Skills*

To answer the first research question, the quantitative data retrieved from the first part of the self-assessment sheet were analyzed with the help of SPSS 25.0 (SPSS, 2017). Table 2 presents the descriptive statistics on the students' general perception of their digital oral skills command when communicating in digital environments. As shown in the table, 21% (N = 16) of the respondents considered their command of digital oral skills to be high compared to 57,9% (N = 44) who described it as average, followed by 21% (N = 16) who described it as low or insufficient.

Building communication skills achieved the highest number of positive responses (Table 3): 84.2% (N = 64) of the respondents rated their command as average or high compared to 15.8% (N = 12), who described it as low. However, the delivery

**Table 2** Overall evaluation: Students' general perception of their command of digital oral competence

		Frequency	Percent
Valid	Insufficient	1	1.3%
	Low	15	19.7%
	Medium	44	57.9%
	High	16	21%
	Total	76	100%

**Table 3** Students' perception of their level of digital oral competence per skill

		Frequency	Percent
Building up communication skills			
Valid	Insufficient	0	0%
	Low	12	15.8%
	Medium	44	57.9%
	High	20	26.3%
	Total	76	100%
Performing communication skills			
Valid	Insufficient	0	0%
	Low	17	22.4%
	Medium	41	53.9%
	High	18	23.7%
	Total	76	100%
Creating digital content skills			
Valid	Insufficient	2	2.6%
	Low	15	19.7%
	Medium	47	61.8%
	High	12	15.8%
	Total	76	100%

and creation of digital content-related skills were self-perceived as considerably lower, with 22.4% (N = 17) of the respondents assessing their command of these skills as low or insufficient.

Within the group of building communication skills, the linguistic area was the most negatively affected. As shown in Table 4, 26.3% (N = 20) of the respondents considered their command of English (vocabulary, grammatical structures, or rhetorical resources) to be low, and therefore, one of their main obstacles to achieving effective digital communication.

Regarding performing communication skills, essential deficiencies stand out both in the physical (non-verbal language) and socio-emotional areas (interaction, security and self-confidence). More than a quarter of the surveyed students (26.3%, N = 20) considered that their command of non-verbal language was insufficient, while a fifth (19.7%, N = 15) admitted not having the self-confidence to communicate in digital environments (Table 5).

**Table 4** Building up communication skills: students' perception of their level of digital oral competence

		Frequency	Percent
Content and cognition area			
Valid	Insufficient	0	0%
	Low	3	3.9%
	Medium	44	57.9%
	High	29	38.2%
	Total	76	100%
Linguistic area			
Valid	Insufficient	0	0%
	Low	20	26.3%
	Medium	45	59.2%
	High	11	14.5%
	Total	76	100%

**Table 5** Performing communication skills: students' perception of their level of digital oral competence

		Frequency	Percent
Physical area			
Valid	Insufficient	0	0%
	Low	20	26.3%
	Medium	35	46.1%
	High	21	27.6%
	Total	76	100%
Socio-emotional area			
Valid	Insufficient	1	1.3%
	Low	14	18.4%
	Medium	47	61.8%
	High	14	18.4%
	Total	76	100%

Finally, in terms of the creation of digital content, a similar number of students (22.3%, N = 17) considered that their technical knowledge (sound, music, video editing, or visual support) was not enough to ensure quality digital communication (Table 6). It is worth noting that the participants were taking their final year at the Higher Technical School of Computer Engineering of the UPM and enrolled in the English for Professional and Academic Communication course.

**Table 6** Creating digital content skills: students' perception of their level of digital oral competence

		Frequency	Percent
Technical area			
Valid	Insufficient	2	2.6%
	Low	15	19.7%
	Medium	47	61.8%
	High	12	15.8%
	Total	76	100%

#### 4.2 *ESP University Students' Perceptions About Their Strengths and Weaknesses When Building Effective Digital Oral Communication*

To complete the information retrieved from the quantitative analysis and further explore our students' perceptions of their command of digital oral skills, we developed a self-assessment sheet based on our theoretical framework for research on digital oracy skills followed in the self-assessment sheet (Bobkina & Domínguez, 2020). As previously explained, the self-evaluation criteria comprised 22 items distributed among three main areas of digital oral skills: building communication skills, performing communication skills and creating digital content skills (Fig. 2). Then, we asked them to describe their most prominent strengths and weaknesses when communicating orally in digital environments (see Appendix A).

The qualitative data resulting from their responses were analysed using three main codes from the framework's main areas: building communication skills, performing communication skills and creating digital content skills (Fig. 2). These comprise further sub-categories also shown in Fig. 2: content/cognition and linguistic area, physical and socio-emotional area, and technical area. Different codes were used for strengths and weaknesses. The contradictory sentences that fell into more than one code were subjected to a negotiated agreement process with two peer coders who were also asked to review the codes with an inter-rater reliability rating of 97% on the final stage of the coding cycle.

Unedited students' responses, subject categories, frequencies, and a selection of relevant comments, are presented in Table 7.

As shown in Table 7, the qualitative data support the quantitative results. Regarding the strengths, the area of content and cognition stands out in 36.5% of the total comments collected. Students emphasised their ability to organise and present information logically and concisely and develop effective visual aids; 20.4% of their comments focused on the physical area, that is, on the presentation. Students highlighted their non-verbal communication skills, pointing to facial and body expressions, gestures, voice volume, or intonation. Regarding the socio-emotional area, around 20% of the students' comments focused on their ability to convey the message safely and emotionally, imagining a specific audience behind the camera.

**Table 7** Students’ perceptions about their strengths and weaknesses when building effective digital oral communication

Categories, frequencies, and a selection of relevant comments		
Categories	Frequencies	Relevant comments
Students’ strengths in digital communication		
Content and cognition area	36.5%	<p><i>‘I believe my strengths are that I clearly explain the topic and that the explanation is well – structured’.</i></p> <p><i>‘The slides are very clear; I have used many images to try to explain how our product works in a very visual manner and it is easy to understand for the audience. The functionality of the product has been explained step by step to make all the details comprehensible. The objective was to avoid being too technical and to focus on the essential part of the process’.</i></p> <p><i>‘Effective message and good visual aid, using specific data on the idea you want to show. In addition, a comparison of examples is used through a table for a quick visualization of the main idea’.</i></p> <p><i>‘I think that the presentation and the concepts that we expose are arranged in a clear way. The slides show both information and images about the project. We believe that the last slide with some of the sources provides credibility and information, not only in the presentation but also the one that has more interest afterwards.’</i></p>
Linguistic area	9.7%	<p><i>‘I think that my best strength is the pronunciation, because my oral expression is correct.’</i></p> <p><i>‘I have good control of English and I am able to construct grammatically correct sentences when talking’.</i></p> <p><i>‘From my point of view, I think one of my main strengths is that I have been taught English since I was a little boy and I consider that I have at least a certain level to speak fluently and to make myself understood’.</i></p> <p><i>‘The expressions and vocabulary used I think are on point and can be understood by any student’.</i></p>
Physical area	20.4%	<p><i>‘Our speech is well delivered as we have cared for our non-verbal communication’.</i></p> <p><i>‘I think my body language is OK and helps the audience to understand the presentation. Voice volume rises and lowers down to stress the key concepts of the presentation’.</i></p> <p><i>‘According to the strengths, I have had pleasant feelings with my body language and how I have communicated the fundamental ideas of the project in the presentation’.</i></p> <p><i>‘Body language: I was rather expressive. I also tried to look at the camera all the time, facilitating the reception of the information with future viewers.’</i></p>

(continued)

**Table 7** (continued)

Categories, frequencies, and a selection of relevant comments		
Categories	Frequencies	Relevant comments
Socio-emotional area	19.4%	<p><i>'First of all, when I present something, I try to be expressive and to give the content to my audience in a proper way. When it comes to emotions, I put a lot of them in what I'm saying and try to not gesticulate too much as too many gestures in my point of view are unfit. I always fit in the time allotted to my presentation. I like to find statistics, facts, examples and stories that support my message. I consider that I have the ability to deal with audience participation challenges'.</i></p> <p><i>'In my opinion, our strengths are our positivity, good sense of humour and our research of the problem is as deep as expected'.</i></p> <p><i>'I like to speak in public and transmit my opinion and knowledge on certain subjects, which in works like this is a point in favour. In addition, I work with clients, which has helped me get rid of the nerves of public speaking'.</i></p> <p><i>'I was able to keep in contact with the audience. I also tried to make my speech emotional and create an appropriate atmosphere'</i></p>
Technical area	14%	<p><i>'The video represents a clean and happy style that combines well with the topic of the presentation –renovation'.</i></p> <p><i>'My main strength in this project is that i had made some other videos previously, uploaded on platforms that thousands of people watched and i am used to talking in front of many people'.</i></p> <p><i>'I have spent a lot of time presenting and editing the video to make it look smooth and natural and I think that shows. The presentation is very tight in time so that it is short and not heavy. The presentation script was thought so that there would be a good transition between some sections and others connecting them'.</i></p>
Students' weaknesses in digital communication		
Content and cognition area	5.3%	<p><i>'Another weak point could be that when trying to summarize so that the presentation was concise and that we did not digress into things that were not important, it is possible that I have been a little short when explaining it'.</i></p> <p><i>'Besides, the visual support was not really appropriate. It was very difficult to represent the idea in images.'</i></p> <p><i>'In the presentation, I think that I could have better unified the two slides, because in the manner they are designed, each one explains different functionalities without being completely connected'.</i></p>
Linguistic area	26.5%	<p><i>'Our level of English is quite good for B2 speakers, but probably it is not good enough for this kind of presentation'.</i></p> <p><i>'I should improve my pronunciation, and learn more vocabulary and grammar, with this I will surely feel more comfortable speaking in English'.</i></p> <p><i>'As for my weaknesses, I think I have a lot to improve on. Mainly, I think my intonation should be better as well as my grammar, which I think should be more formal. Also, I should improve my vocabulary in technical areas.'</i></p> <p><i>'I would like to improve my pronunciation and intonation. One of my greatest problems is that I first think in Spanish and try to translate it into English'.</i></p>

(continued)

**Table 7** (continued)

Categories, frequencies, and a selection of relevant comments		
Categories	Frequencies	Relevant comments
Physical area	23%	<p><i>‘Though I tried to maintain visual contact with the imaginative audience, it was difficult for me and I was not very confident’.</i></p> <p><i>‘Moreover, we should talk with more energy in order to draw the attention of the viewers and be more interesting’.</i></p> <p><i>‘Other thing I need to improve is the speed that I do when I am talking. Sometimes I talk faster than I should because I get nervous when I am doing an oral presentation and it affects my self-confidence.</i></p> <p><i>‘My body communication could be more natural and I should try to make more gestures with the hands emphasizing in the most important moments’.</i></p>
Socio-emotional area	23%	<p><i>‘Sometimes I get very nervous, although I have a correct pronunciation most of the time, there are words that are difficult for me to pronounce. When I go blank, I take a lot of breaks and I need to review the material in order to continue’.</i></p> <p><i>‘Regarding weaknesses, I considered myself as a shy person, I would need to be more self-confident and not have plenty of doubts about any tasks I try to resolve. Moreover, I believe that I should not relax at certain times and try to be more responsible when I am too conscious about the tasks’ solutions’.</i></p> <p><i>‘I get emotional when I have to talk, because it’s my first oral presentation, even if I didn’t have an audience, for me it was a little bit complicated. I think I need to work on this’.</i></p>
Technical area	22.2%	<p><i>‘The recording itself could be improved, especially the background’.</i></p> <p><i>‘My main weakness on this oral presentation are the resources that I have in my actual house to record and edit the video, without my usual computer I have done my best to record and upload to a platform to share’.</i></p> <p><i>‘The quality of the video is rather bad, low resolution, a lot of noise and inappropriate background’.</i></p>

The lowest positive comments were gathered for the linguistic (9.7%) and digital creation areas (14%).

Among the weaknesses, the linguistic area (with 26.5% of the comments) concerned students greatly. They highlighted their lack of mastery of specific vocabulary and complex grammatical structures, and severe pronunciation mistakes, which limited their general communication skills. The physical (23%), the socio-emotional (23%), and the creation of digital content areas (22.2%) were similarly problematic. Regarding the physical area, students self-reported their inability to maintain gaze with an imaginary audience, ineffective body language, excessive or static gesticulation, inappropriate volume, and voice speed issues. The socio-emotional area mainly was related to their high levels of anxiety and stress experienced when exposed to the camera, resulting in a loss of self-confidence. The students’ comments focused on their lack of experience and resources for creating quality digital

content regarding the content creation area. Finally, the content and cognition area gathered only 5.3% of the total comments.

## 5 Discussion and Conclusions

The study was undertaken in the belief that it could help better understand the ESP Engineering university students' needs when communicating in digital oral environments through the analysis of students' perceptions about their command of digital oral skills. Digital settings for oral communication are gradually becoming more generalised in the modern labour market. Their relevance as an essential element in current engineering education can hardly be overestimated (Bejaković & Mrnjavac, 2020; Minh et al., 2020). Therefore, analysing our students' perceptions regarding their command of digital oral skills offers essential information to help them thrive in communicating in traditional and digital settings.

The study results reveal that digital oral communication is a pending subject for almost 21% of the respondents who described their level of command as low or inadequate. Regarding the skills involved in communication, difficulties were detected at all three stages of language communication: building, performing and digital content creation. When analysing the data in detail, the most problematic areas of oral communication resulted in being the physical and linguistic ones (both with 26.3% of the students describing their skills as low or deficient), followed by the technical and socio-emotional areas (with 22.3% and 19.7% of the students describing their skills as low or deficient).

Building up communication skills was described by most students as the least troublesome area, especially when it comes to cognition and content. These results could be explained by students' broad experience in organising and presenting information during their academic years. On the contrary, the linguistic area was rated as especially problematic. About a quarter of the respondents considered that their command of English was not sufficient, even limiting their general communication skills. These results confirm some previous research on ESP students' needs, pointing out such aspects as a mismatch between students' general language competence and curriculum requirements, varying levels of English proficiency, or large classes, among others (Marwan, 2017; Hoa & Mai, 2016; Iswati & Triasuti, 2021), as well as the lack of general preparation in communication skills in ESP contexts (Mercer et al., 2014a, b).

Regarding performing communication skills, essential difficulties were detected in approximately 22.4% of the respondents who described their general level of performing skills in digital contexts as deficient. In particular, more than a quarter of the respondents considered that their command of non-verbal language was insufficient; meanwhile, about one fifth admitted not having the self-confidence to communicate in digital environments. In terms of non-verbal communication, the



students self-reported their inability to maintain their gaze with an imaginary audience, ineffective body language, excessive or static gesticulation, inappropriate volume, and voice speed issues. These findings support previous research on non-verbal communication in traditional settings, confirming the troublesome use of kinesics and proxemics elements, such as gestures/facial expressions and managing space and distance (Crawford-Camicciottoli, 2020; Maloney et al., 2020; Šerić, 2020). Nevertheless, some studies confirm that this challenge becomes even more complicated when acting in front of the camera (Palmer-Silveira, 2019; Jiménez-Muñoz, 2019; Valeiras Jurado & Ruiz-Madrid, 2015, Domínguez Romero & Bobkina, 2021a).

When dealing with the socio-emotional aspects of communication, lack of self-confidence and speaking anxiety are the two most common problems described by around 20% of the surveyed students. In particular, some respondents attributed high levels of stress to the pressure of speaking in front of the camera, resulting in a loss of self-confidence. These results are consistent with previous studies that establish a direct relationship between students' confidence and oral skills (Al-Hebaish, 2012; Kalanzadeh et al., 2013; Tridinanti, 2018; MacIntyre, 2017). In fact, numerous researches highlighted self-confidence as a key aspect for students to develop oral communication skills (Arifin, 2017; MacIntyre, 2017). In this way, the results showed that highly self-confident students were found to be more inclined to involve themselves in conversations and other spoken activities in English. Among the factors that negatively influenced students' self-confidence when performing oral tasks, lack of practice, lack of vocabulary, lack of ability, and lack of preparation were the most common ones (Tridinanti, 2018).

Regarding speaking anxiety, research confirms that this specific type of anxiety affects learners' language achievement, primarily when learners are asked to do speaking activities in front of the class (MacIntyre, 2017; Teimouri et al., 2019). Nevertheless, its impact on students' speaking anxiety is not clear enough for digital oral communication. Many students in our study commented that the digital settings allowed them to convey the message safely and emotionally, as their message could have been repeated as many times as necessary. In this sense, several recent studies confirm that virtual settings may positively impact the students' speaking anxiety and may reduce the level of stress (Bashori et al., 2020; Moise-Richard et al., 2021). However, this reduction in anxiety cannot always be considered a positive trait, as it might be related to the fact that "disembodied classes have less emotional resonance" (Resnik & Dewaele, 2021).

Contrary to our expectations, the creation of digital content was perceived as somewhat problematic, with approximately 22% of the students describing these skills as low or deficient. Quite surprisingly, the technical aspects of oral digital communication (sound, music, video editing or visual support) were reported to be particularly challenging as a good number of students considered their technical knowledge insufficient to ensure quality digital communication. These findings are in line with some previous research providing evidence of the fact that digital natives

(Prensky, 2001) are not as proficient in the use of technology as often expected (Lei, 2009; Thinyane, 2010; Thompson, 2013) and do not regard themselves as digital natives efficient at multitasking (Thompson, 2015). Their digital skills, which are not necessarily in line with their academic and professional work, are frequently overestimated by instructors (Kirschner & van Merriënboer, 2013; Magrino & Sorrell, 2014).

## 6 Pedagogical Implications

The pedagogical implications of the study point to the need for an emphasis on digital communication in both professional and academic contexts, preparing students for the new communication reality that is led by technology. Teachers should consider using video recordings and presentations as effective tools to prepare students for twenty-first-century communication. They should incorporate different techniques and activities that would be beneficial to them for developing skills related to digital communication, such as how to use academic language in oral communication, how to behave in front of the camera, how to speak for a virtual audience, how to overcome shyness and pressure, or how to record and edit videos.

In this sense, addressing how teachers include digital oral language development, and in particular vocabulary practice, is crucial to reducing student anxiety and increasing their communication skills and self-confidence. This study provides evidence that students believe they need additional long-time support as developing digital communication skills in academic and professional contexts is a time-consuming task in their view.

To conclude, it is essential to acknowledge that this study is based solely on self-reporting, affecting its reliability and validity. Besides, no comparison between students' scores on their work and their self-reporting results have been made. In addition, the limitation in the size of the sample renders our results preliminary. Research is therefore needed to further explore how digital communication contexts affect ESP students' oral communication ability, not only in the field of Engineering, but in others as well. However, these results open up a research niche that should not be neglected. Further research on digital online communication is indeed necessary to analyse the skills and abilities students must develop to tackle the challenges of twenty-first-century communication.

## Appendix A

### Oral Presentation Self-Assessment Sheet

	Digital Oracy Skills	Competence level (from 1 to 4)	Comments (include specific problems you noticed)
Building communication skills	<b>Content and cognition area:</b>		
	<b>Content:</b> Content and approach was relevant, interesting and engaging; the purpose of the speech was clear.		
	<b>Organisation:</b> Good organizational structure; opening grabbed the listeners; explicit and frequent signposts; powerful closing. <b>Visual aids:</b> Visual aids were relevant; aids clarified important concepts; aids were appropriate for the audience and the room; well designed <b>Audience:</b> Speech was perfectly designed for the specific audience; key points were understandable; several clear connections with the audience.		
	<b>Appearance:</b> Student looked sharp; dress was appropriate for the speech; added something to go above and beyond expectations.		
	<b>Linguistic area:</b>		
	<b>Vocabulary and pronunciation:</b> Student incorporated a wide range of vocabulary and used idiomatic expressions appropriate to the topic; spoke clearly, with accurate pronunciation.		
	<b>Language variety:</b> A proper register was used.		
	<b>Structure:</b> Sentences were well constructed and had a varied structure and length. There were very few grammar mistakes.		
	<b>Rhetorical techniques:</b> Rhetorical techniques, such as metaphor, humor, irony, and mimicry were used to gain audience's attention and make the presentation memorable.		
	Performing communication skills	<b>Physical area:</b>	
<b>Poise:</b> Student appeared calm and confident; there was no distracting behaviour.			
<b>Voice:</b> Student's voice was right for the space—not too loud or too soft; every word was heard; student did not mumble or blur words together.			
<b>Life:</b> There was feeling in the student's voice: emotion, passion, excitement, or sadness.			
<b>Eye contact:</b> Student maintained eye contact with audience, looking at each member of the audience; they barely glanced at their note cards.			
<b>Gestures:</b> Student's hand, face, and body gestures were very effective; their motions added to their speech.			
<b>Speed and timing:</b> The speed was appropriate: not too fast or too slow; with speed variations — faster for exciting parts and slower to add emphasis; pauses were used to let the main points sink in with the listeners; timing was accurate.			
<b>Socio-emotional area:</b>			
<b>Interaction, listening and responding:</b> Student used active listening techniques when listening to their classmates and answering their questions and comments.			
<b>Confidence in speaking:</b> Student spoke with self-assurance, liveliness, and flair in their voice.			
<b>Audience awareness:</b> Student followed the audience's reaction, taking account of their level of understanding, and adjusted their speech accordingly.			

What are your strengths and weaknesses to build effective digital oral communication? (please, provide a short paragraph of about 100-150 words):

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# Language MOOCs as an Emerging Field of Research: From Theory to Practice



Elena Martín-Monje

**Abstract** Language MOOCs (Massive Open Online Courses) have been identified as an emergent and expanding field of research. They represent an innovative educational proposal that emphasizes the open and social side of language learning in digital environments. This chapter offers an overview of the state of the art in the field, with distinct parts. First, it shows the progress made in scholarly research -in terms of the conceptualization, theoretical foundations, and current research trends in LMOOCs (Language MOOCs). Then it focuses on what constitutes best practice in LMOOCs for English learning: it establishes a taxonomy of courses on offer, the learning scenarios in which they can be implemented, and most importantly, describes their specificities, key elements, and functionalities. Finally, it offers guidelines for teachers and researchers interested in creating quality LMOOCs for English teaching and learning.

**Keywords** MOOCs (massive open online courses) · Language MOOCs · Social learning · English as a foreign language · English language teaching · English language learning

## 1 Introduction

Since their emergence at the beginning of the millennium, MOOCs (Massive Open Online Courses) have generated controversy and challenged the educational status quo. The possibility of learning online at a massive scale was initially perceived as a threat to campus-based universities and a devaluation of higher education. Besides, these courses consolidated the shift from a teacher-centered to a learner-centered

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methodology, with teachers becoming facilitators of learning instead of the source of knowledge, and a markedly unbalanced teacher-student ratio.

In a MOOC, teachers are not able to provide attention to individual learners. Therefore, participants must be autonomous and rely more on learner-learner interactions than on the teacher-learner ones. This model is not suitable for everyone, but successful MOOC participants thrive in setting their own learning pace and deciding how actively they engage with the course content; without the pressure of tuition fees and the need to pass the course, they have a lighter, more flexible approach to learning and their involvement with the MOOC may range from being mere observers and downloading relevant resources to conscientiously taking part in discussion forums, submitting assignments and becoming fully active participants.

In the context of language learning (LL), the debate regarding whether MOOCs are good quality and effective learning environments has become even more contentious, since learning a foreign language such as English requires considerable practice and constant feedback in order to make progress in the different linguistic skills, all of which may pose a challenge in a massive course.

This chapter provides an overview of the state-of-the-art in Language MOOC (LMOOC) research with a special focus on English learning. In fact, English language MOOCs are not only the ones most widely offered, but also the most researched (Sallam et al., 2020). Nearly a decade after the first Language MOOCs or LMOOCs appeared, back in 2013, it seems timely to reflect on this innovative open social language learning paradigm, looking into the theoretical postulates that lie at its foundation and providing guidelines for the design and implementation of high-quality courses for English learning.

The structure of the chapter is as follows: firstly, the concepts of openness and social learning applied to LL are taken into consideration, looking into all the relevant theories that conform the theoretical framework. Next, MOOCs and LMOOCs are described, providing a conceptualization of this educational model. The second part of the chapter is of a more practical nature, presenting a classification of the different types of LMOOCs that are available for EFL (English as a Foreign Language)/ESL (English as a Second Language) and enumerating learning scenarios in which they can be implemented. Finally, the key elements and functionalities of LMOOCs are outlined, offering a research-based guide of good practice, with the aim of consolidating this emerging sub-field of Computer-Assisted Language Learning (CALL) as a solid area of research (Gillespie, 2020).

## 2 Openness and Social Language Learning

The concept of open education was in its origin very much linked to the appearance of The Open University in Britain (1969) – which claimed that access to education and educational resources should be viable and free for all-and removing the access requirements that universities normally have. This concept gradually evolved (Weller, 2012) and nowadays open education is more identified with online teaching

and digital resources that are offered openly, than with distance education. Open Educational Resources (OER) are “any educational resources (...) that are openly available for use by educators and students, without an accompanying need to pay royalties or licence fees (Butcher, 2015, p. 9). It is within this trend of openness in the educational context that MOOCs were born at the beginning of the millennium. In the *White Paper MOOCs and Open Education: Implications for Higher Education*, Yuan and Powell (2013) explain that MOOCs are considered a logical extension of the open education movement and will be discussed in depth further on in this paper.

OERs are based on the principle of the “5 Rs” (Wiley, 2014), which are five activities that these OERs should allow:

1. **Retain:** the right to make, own, and control copies of the content (e.g., download, duplicate, store, and manage).
2. **Reuse:** the right to use the content in a wide range of ways (e.g., in a class, in a study group, on a website, in a video).
3. **Revise:** the right to adapt, adjust, modify, or alter the content itself (e.g., translate the content into another language).
4. **Remix:** the right to combine the original or revised content with other material to create something new (e.g., incorporate the content into a mashup).
5. **Redistribute:** the right to share copies of the original content, your revisions, or your remixes with others (e.g., give a copy of the content to a friend).

OERs have a great potential for the teaching and learning of foreign languages (Beaven et al., 2013; Comas-Quinn et al., 2019; Comas-Quinn & Borthwick, 2015), and allow for different degrees of engagement and integration within the teaching practice: (1) using open pedagogies; (2) enhancing open learning, encouraging students to participate in free courses and initiatives, such as translation in collaborative environments, e.g. TED Open Translation Project<sup>1</sup>; (3) promoting open research and publication, such as the OpenLIVES project ((Nelson & Pozo-Gutiérrez, 2013); (4) sharing content through wikis, blogs, and micro-blogs (e.g. Twitter<sup>2</sup> or other social networks that can be used for language learning). As Comas-Quinn and Borthwick put it, “choosing how far to engage with OER entails a range of reflective activities that are a key part of teacher professional development” (Comas-Quinn & Borthwick, 2015, p. 103).

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<sup>1</sup> <https://www.ted.com/participate/translate>

<sup>2</sup> <https://twitter.com/>

## 2.1 *Social Learning*

As stated by Hampel (2015), in current CALL it seems more appropriate to follow theoretical approaches and research-based pedagogies which conceive the learning process as a social activity and highlight the importance of the context of learning, leaving behind approaches that are based on psycholinguistic principles, such as Krashen's (1985) input hypothesis. Although the former recognizes the importance of interaction, teaching is seen in terms of providing input and tends to "focus on cognitive processes and the acquisition of particular linguistic features rather than understanding second language development as learning a social practice by using the language in communication with other speakers" (Hampel, 2015, p. 135). I agree with Hampel's line of thought and envision language learning's social aspect as crucial in open language learning, especially in LMOOCs.

It is important at this point to refer to sociocultural theory, since it has been highly influential in theorizing online learning and teaching (Hampel, 2015). Initially developed in Russia in the 1920s, it associates individual mental processes with the socio-cultural context in which they take place. It has led to other sub-theories which focus on the social nature of learning: Socio-constructivism, which conceives knowledge as socially constructed (Vygotsky, 1978); and situated learning, which envisages learning as "an integral part of generative social practice in the lived-in world" (Lave & Wenger, 1991, p. 35). Another notion that is relevant to this research is that of 'communities of practice'. According to Lave and Wenger (1991), communities of practice are groups of people who share an interest or passion for something they do and learn how to do it better through their regular interaction. These communities of practice are very much linked to the cMOOC (connectivist MOOC) initiatives which are explained and discussed in the next section, characterised by networked learning instead of a centralised core of content in a single learning platform.

Hampel (2015) cites task-based language teaching in CALL, telecollaboration, and mobile LL as three approaches that have been influenced by sociocultural theory, and a fourth one could be added, LMOOCs. As Hampel evidences, these approaches focus on the process of learning rather than on the final outcome. This author highlights three key aspects in the current way of approaching online language teaching and learning: (1) the role of the teacher who designs the tasks and the learners who engage actively with them and change them in the process; (2) the role of communication and how it is linked to the development of intercultural skills; and (3) the digital literacy that students need to put in practice in online learning environments. All three aspects are shared by LMOOCs in particular, and MOOCs in general.

Sokolik (2014) goes further down this line and provides some recommendations for social learning with LMOOCs specifically: (1) maximize engagement and interaction; (2) facilitate, but do not manage, self-directed learning, for example through social media; (3) create an instructor presence; (4) use video for engagement and as

a source of authentic materials; (5) define success (make students think of their goals); and (6) match goals and assessment.

In sum, the socio-cultural theory has been crucial in the evolution of CALL and these past decades in the development of LMOOCs specifically, highlighting the social nature of learning, creating online communities, and giving more prominence to the learning process, the practice with peers, than to the outcome. Both teachers and researchers should contemplate these general postulates, together with Sokolik's recommendations for social learning in LMOOCs.

### 3 MOOCs and Language MOOCs

The interest in OERS, Open Practices, and Open Learning spaces in language teaching and learning in digital environments has increased in the last decade, as has been acknowledged by Martín-Monje and Borthwick (2021) and Gimeno-Sanz (2016). LMOOCs have been an important part of this trend, since these courses represent an exploration of the potential of open learning and teaching environments at a massive scale (see Blyth & Thoms, 2021 for instance for a more detailed discussion on the topic).

While MOOCs have been defined as “courses designed for large numbers of participants, that can be accessed by anyone anywhere as long as they have an internet connection, are open to everyone without entry qualifications, and offer a full/complete course experience online for free” (Sanagustín et al., 2016, p. 9), Language MOOCs have been described by Barcena & Martín-Monje (2014, p. 1) as “dedicated web-based online courses for second languages with unrestricted access and potentially unlimited participation”, and by Gimeno-Sanz (2021, p. 49) as “online courses offered for a limited period of time by higher education institutions worldwide for anybody wishing to learn a foreign language”. They have grown and expanded exponentially since their appearance in 2013 (Jitpaisarnwattana et al., 2019) and the MOOC platform Class Central currently showcases over 500 courses through the main MOOC providers.<sup>3</sup>

One of the main reasons why MOOCs have been perceived as a disruptive force in Education (Farrow, 2017) is because they break down the traditional boundaries between formal, non-formal, and informal education. MOOCs represent the development of online learning at a massive scale (Conde-Gafaro, 2019; Daniel, 2012) and have led to innovative proposals for content delivery, tuition, assessment, and accreditation (Martín-Monje & Borthwick, 2021). MOOCs are commonly offered for a limited period of time and are advised to last between 4 and 6 weeks (Brown et al., 2016). Language MOOCs generally follow those guidelines, focusing on specific aspects of foreign LL (Gimeno-Sanz, 2021), and mainly follow an xMOOC, or “eXtended MOOC” format, that is, those MOOCs which are based on traditional

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<sup>3</sup><https://www.classcentral.com/subject/language-learning>

university courses but are scalable, broadening the number of students who can take advantage of their contents.

MOOCs are usually divided into two distinct types based on their pedagogical approach (Yuan & Powell, 2013, p. 7): “the connectivist MOOCs (cMOOC) which are based on a connectivism theory of learning with networks developed informally; and content-based MOOCs (xMOOCs), which follow a more behaviorist approach”. The main difficulty in following a cMOOC lies in the fact that these courses do not have a centralized core of the content. They emphasize interaction and community building (Lebedeva, 2021; Sokolik, 2014), on the fringes of Higher Education institutions (HEIs), and thus the courses are set up around a group of individuals with similar interests, putting the course together through networked content. At the opposite end, xMOOCs tend to be a continuation of the pedagogical models provided by HEIs. They run on a single platform and their structure is similar to a regular online course, so students find it easier to follow the learning pathways of this type of MOOCs. The courses are built around a syllabus with sequenced content and activities (Sokolik, 2014), instruction is provided mainly through pre-recorded video-lectures and textual resources, and the favored form of assessment are computer-scored tests (Gilliland et al., 2018). Peer assessment was initially proposed as ideal formative assessment and an effective way to provide feedback in these massive contexts (Suen, 2014) but research has linked the use of this P2P (peer-to-peer) assessment to lower completion rates in MOOCs (Ferguson et al., 2016) and the popularity of P2P activities has decreased.

In the context of LMOOCs, course designers who opt for an xMOOC format often struggle with the constraints of the platform, which is not very flexible or adaptable, especially for the practice of oral skills (Gimeno-Sanz et al., 2017). These xMOOCs usually follow the same pattern: there is a course syllabus which contains recorded video-lessons and self-assessment tests to check students’ progress. There are no built-in tools that enable oral production or interaction, and many LMOOCs that follow this format have to leave speaking activities out of their course design, or resort to added functionalities that focus on the specific needs of language learners: videos with captions in L2 (target language) -or L1 (native language) in lower levels-, glossaries, online dictionaries, voice-recording tools, or other ICT (Information and Communication Technologies) applications to enable synchronous communication.

Bearing in mind all the restrictions that the xMOOC format has for massive language courses (mainly the lack of technical features that allow online oral practice and interaction), authors seem to agree that opting for the cMOOC model would bring substantial advantages for LL: creation of learning networks, community building (Sokolik, 2014), knowledge creation as opposed to knowledge duplication (Panagiotidis, 2019), interaction in an open social context (Moreira Teixeira & Mota, 2014), and most importantly, alignment with postulates of the Communicative Approach for LL (Panagiotidis, 2019; Sokolik, 2014). However, there is no record of successful cMOOCs for LL so far (Fontana & Leffa, 2018), probably because it is actually quite demanding to set up an LMOOC with these characteristics, since cMOOCs require participants to be computer-savvy in order to navigate these

non-linear courses, and to master digital competences such as collaboration, creativity, communication, critical thinking, and information media skills (McLoughlin & Magnoni, 2017), as well as being autonomous learners, as previously stated.

On the contrary, despite their limitations, xMOOCs represent a more comfortable learning format for learners, since they follow the structure of a regular online course offered by HEIs, in which the learning materials are centralized and students choose the level of engagement, with active social interaction usually limited to discussion forums (Martín-Monje et al., 2018; Sokolik, 2014). That is why that model, with more or fewer variations, is the one that has been generalized, although some researchers advise to try some hybrid forms in the future: the clear pattern of the xMOOC model in lower-level LMOOCs which opens up to more networked cMOOC-oriented LMOOCs for higher proficiency levels, in which the social dimension gains in importance (Godwin-Jones, 2014; Sokolik, 2014).

There are three key elements that characterize LMOOCs (Sallam et al., 2020): (1) a robust set of communication tools for LL, such as discussion forums, blogs, wikis, video-conferencing tools, or social media; (2) short videos with linguistic and cultural content, which become the main source of authentic materials and are powerful resources for student engagement in the course; and (3) assessment tools valid for heterogeneous cohorts, always linked to the course aims and ideally combining peer and self-assessment. This will be seen in more depth in the section entitled “Best practice in LMOOCs” further on in the chapter.

In line with this, the main strengths of LMOOCs are the free availability of quality LL resources, generated by HEIs around the world, and also the learner-centered approach that encourages autonomous, self-directed learning (see for instance Agonács et al., 2019). Nevertheless, LMOOCs have not been exempt from criticism, since learning a language in a massive course may make it a less pleasurable and productive experience, especially when it comes to practising oral production. Besides, LL is skill-based, and it entails considerable practice and interaction, which is not easy in massive courses. Detractors claim that MOOCs are not suitable to teach grammatical structures, unless participants learn inferentially among themselves (Stevens, 2013), they rule out live communicative interaction with ‘native’ speakers (Romeo, as cited in Panagiotidis, 2019, p. 287), and often result in lower social interaction (Schulze & Scholz, 2018). It has been also acknowledged that the impersonal nature of MOOCs may lead learners to a sense of solitude (Barcena et al., 2015), and the biggest challenge of all is to maintain the motivation throughout the course, without a close contact with students (Sallam, 2020). According to some scholars, though, this issue is more complex, and the ability and willingness to learn autonomously (Hauck & Hurd, 2005) and intrinsic motivation (Barkanyi, 2021) can play a key role. All these shortcomings have led some authors to assert that few high-quality LMOOCs exist to date (Russell & Murphy-Judy, 2021).

Despite the criticism, LMOOCs are on the rise. The pandemic has boosted the interest in online learning and led to what Shah (2020) has called ‘The Second Year of the MOOC’. Back in 2012, the New York Times had proclaimed it to be ‘The year of the MOOC’, signaling the educational phenomenon that was multiplying at an incredibly rapid pace. The health crisis that has shaken the world in 2020 has led



to a staggering rate of enrolments in MOOCs. For instance, Shah states that in April 2020 Coursera, edX, and FutureLearn, – the main MOOC providers- registered as many new users in a single month as they did in the whole of 2019. LMOOCs have been part of this trend and are becoming increasingly popular, as evidenced in their recent inclusion in the top ten most followed subjects in MOOCs (Shah, 2020). Not only that, research has shown that LMOOCs can cover all aspects of LL (Sallam et al., 2020), although some are more effective than others: LMOOCs are most suitable for reading and listening (receptive skills), whereas writing, and especially speaking have proved to be more problematic (Appel & Pujolà, 2021).

Research in LMOOCs is very recent, and it has been recognized as one of the less-studied areas in CALL (Gillespie, 2020; Martín-Monje & Borthwick, 2021). However, it is proving to be an emergent and expanding field (Godwin-Jones, 2014; Jitpaisarnwattana et al., 2019; Martín Monje & Bárcena Madera, 2014; Panagiotidis, 2019). The first publications date back to 2014 and a recent systematic review of the published literature (Sallam et al., 2020) has identified the following research trends in LMOOCs:

- Conceptualization of LMOOCs and their distinctive features.
- Limitations of the MOOC platforms for language teaching and learning.
- Attempts to overcome the xMOOC/cMOOC dichotomy and find the model that is most suitable for language teaching and learning. Some authors even argue that a blended modality, combining LMOOCs and face-to-face classes is the ideal method for optimal language learning.
- Usefulness of LMOOCs for LSP (Languages for Specific Purposes) courses.
- Focus on the learners and their motivation and experience throughout the LMOOC.
- Reflection on the new role of the teacher in LMOOCs. The source of knowledge is not the instructor -who acts as a facilitator- but the open resources available in the LMOOC, and this creates a new balance between teacher and student.
- The instructional design of the course and its effects on participants' learning and attrition.
- Importance of social learning in LMOOCs, and how this has to be further explored, in order to achieve fluent communication between participants and instructors/course creators, despite the massive nature of the course, and their feedback can be used to improve the resources and activities of LMOOCs in their successive editions.

Looking closely at these trends, it becomes apparent that most of the research published so far has focused on practical aspects of LMOOCs, such as the limitations of the platforms or the role of the teacher and students, and less scholarly effort has been devoted to the theoretical foundation. This research background has been the motivation for the current chapter, which aims to take a broader approach to LMOOCs, focusing first on its theoretical underpinnings and then on how this has been put into practice. This will be discussed next.



### 3.1 *Best Practice in LMOOCs*

The preceding section has dealt with the conceptualization of LMOOCs, and the incipient research published in the field. Now, it is necessary to look into its implementation, with a special focus on LMOOCs for English teaching and learning which is, by far, the most popular language in this type of courses and in online learning in general. This section describes the different types of LMOOCs that have been developed for EFL/ESL and the learning scenarios in which they can be implemented. Next, the key elements and functionalities that constitute best practice in this type of courses are itemized.

#### 3.1.1 LMOOC Types and Learning Scenarios

It has already been discussed that depending on the pedagogical approach, MOOCs can be classified into cMOOCs or xMOOCs, and most LMOOCs fall into the latter category. Looking at the current offer, out of the 564 LMOOCs listed by the Class Central platform, previously mentioned, 424 of them are dedicated to English. Examining their content, the following thematic typology can be established in LMOOCs for EFL/ESL:

1. **General LMOOCs:** These courses focus on the mastery of EFL/ESL as a whole and are usually sequenced in levels. Two examples are: “Basic English 1: Elementary” by King’s College London on the MOOC platform FutureLearn<sup>4</sup> and “Upper-Intermediate English” by Universitat Politècnica València on edX.<sup>5</sup>
2. **LMOOCs focusing on certain skills:** These are devoted to specific aspects of LL which pose special difficulty for EFL/ESL learners, such as “Conversational English skills” by Tsinghua University on edX<sup>6</sup> or “The pronunciation of American English” by the University of California, Irvine on Coursera.<sup>7</sup>
3. **LMOOCs on English for Specific Purposes:** Research shows that special attention has been paid to ESP (English for Specific Purposes) in LMOOC provision (Sallam et al., 2020), since this type of LMOOCs offers a very convenient learning model for professionals in need of specialized language skills (Godwin-Jones, 2014) who usually have little time for face-to-face classes. Some examples are: “English for the Workplace” by the British Council on FutureLearn<sup>8</sup> or “Inglés profesional/Professional English” by Universidad Nacional de Educación a Distancia (UNED) on UNED Abierta.<sup>9</sup>

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<sup>4</sup><https://www.futurelearn.com/>

<sup>5</sup><https://www.edx.org/>

<sup>6</sup>edX is an American MOOC provider.

<sup>7</sup><https://www.coursera.org/>

<sup>8</sup>FutureLearn is a British MOOC (Massive Open Online Course) provider.

<sup>9</sup><https://iedra.uned.es/>

4. **Tandem LMOOCs combining L1 and L2:** These courses adopt an eTandem learning approach, in which “pairs of learners who are native or near-native speakers of each other’s target languages collaborate to learn each other’s language” (Appel & Pujolà, 2021, p. 163). Although one of the first LMOOCs was precisely a tandem LMOOC (Bryant, 2013), not many tandem LMOOCs for EFL/ESL have been created to date, probably due to the inherent complications of needing two distinct cohorts every running of the course, one in L1 and one in L2. A very good example, though, is “TandemMOOC English-Spanish”, by Universitat Oberta de Catalunya, hosted on a Moodle platform.<sup>10</sup>
5. **LMOOCs on cultural aspects in English-speaking countries:** Culture is an essential part of LL and has become more explicit in online EFL/ESL courses. Some examples of this trend are the LMOOCs offered by the British Council on FutureLearn<sup>11</sup> “Exploring English: Food and culture” and “Language and culture”.
6. **LMOOCs to prepare for standardised tests:** Many learners are interested in taking standardised tests in order to obtain an official certificate that proves their EFL/ESL competence. Accordingly, various online courses offer students guidance on the specificities of these exams, e.g. “IELTS academic test preparation” by University of Queensland on edX<sup>12</sup> or “How to succeed in the English B1 level exam” by UNED on UNED Abierta.<sup>13</sup>
7. **LMOOCs for social inclusion:** Although MOOCs were initially conceived as an attempt to democratize education, different studies confirm that the majority of MOOC and LMOOC participants come from a high socio-demographic background and have a high educational level, so MOOCs are not really reaching the target population they were intended for (Castrillo & Sedano, 2021). In the context of EFL/ESL, the most relevant attempts to reverse this trend and provide LMOOCs to help migrants and refugees integrate into the host culture have been the programs devised by Kiron,<sup>14</sup> a non-profit organization that has developed a language school with a blended learning methodology, combining online and offline tuition.
8. **MOOCs on English Medium instruction (EMI) and CLIL (Content and language integrated learning):** In the past decades there has been a growing demand for learning contexts in which subjects are taught in a foreign language –often English– with the double aim of learning simultaneously the content of the subject and the foreign language. CLIL is usually followed in Primary and Secondary Education, while EMI has been adopted by many HEIs. In line with this trend, quite a few MOOCs have been designed with this focus. Two examples are “English as a Medium of Instruction for Academics” by the University of

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<sup>10</sup><https://moodle.speakapps.org/>

<sup>11</sup> See footnote 8.

<sup>12</sup> See footnote 6.

<sup>13</sup> Iedra is a Spanish MOOC provider.

<sup>14</sup><https://kiron.ngo/>

Southampton or “Teaching your subject in English” by Cambridge Assessment English, both on FutureLearn.<sup>15</sup>

9. **MOOCs on LL methodology:** Both this final category and the previous one are devoted to EFL/ESL professionals who wish to keep up to date with English teaching and learning methodologies. Some examples of MOOCs catering for these needs are “TESOL strategies: Supporting ESL students in Mainstream Classrooms” by the University of Glasgow on FutureLearn<sup>16</sup> or “TESOL methodology” by University of Maryland, Baltimore county.<sup>17</sup>

### Learning Scenarios

MOOCs and LMOOCs provide a flexible, modular approach to learning and can be used in different ways in the educational context. Ebner et al. (2020) have established a taxonomy identifying seven possible learning scenarios in which MOOCs can be used, ranging from the conventional MOOC to blended models or even flipped learning. As for LMOOCs, these four following learning scenarios have been identified in the literature: (1) stand-alone courses, which is the most usual one (Appel & Pujolà, 2021; Castrillo & Sedano, 2021; Gimeno-Sanz et al., 2017; Lebedeva, 2021; Martín-Monje et al., 2018); (2) LMOOCs used as a remedial tool for students falling behind in their regular formal education programs, as evidenced in Whitmer et al. (2015); (3) LMOOCs which support and enhance self-directed learning (Conde-Gafaro, 2019); and (4) Blending the MOOC into the syllabus of a university course (Orsini-Jones et al., 2017; Orsini-Jones & Cerveró-Carrascosa, 2019).

This proves that MOOCs and LMOOCs can be used in various ways and situations, not just as online courses. This is an interesting feature, since it provides flexibility and added value to the LL experience, opening up the choice of learning formats, in a continuum that ranges from stand-alone LMOOCs to a varying blend of online instruction and face-to-face classes. As Ebner et al. state: “MOOCs have a very high potential to assist not only mere online learning situations but also to assist a mix between face-to-face and online learning scenarios” (2020, p. 84). This potential should be further explored in the context of EFL/ESL, as it would help resolve one of the most pressing issues in LMOOCs, the practice of productive skills, since it could be incorporated as an in-class activity when blending the MOOC into face-to-face instruction (Gimeno-Sanz, 2021).

### 3.1.2 Key Elements and Functionalities in LMOOCs

The three key elements that characterize LMOOCs, as stated by Sallam et al. (2020) and formerly mentioned in this chapter are a robust set of communication tools for LL, short videos with linguistic and cultural content, and assessment tools valid for

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<sup>15</sup> See footnote 8.

<sup>16</sup> See footnote 8.

<sup>17</sup> <https://www.openenglishprograms.org/MOOC>

heterogeneous cohorts. Based on this, and after analyzing relevant published literature, the following six aspects have been identified as constituting best practice in EFL/ESL MOOCs: (1) basic structure; (2) learning objects; (3) assessment tools; (4) communication tools; (5) learning strategies; and (6) other functionalities.

### **Basic Structure**

The heterogeneity of participants that sign up for LMOOCs calls for a scaffolded structure that supports learners (Read, 2014), as they engage in increasingly more complex EFL/ESL activities. A distinction should be made between the core content and the supporting materials, so that students know clearly which resources are essential and which ones are extra and “can ‘pick and choose’ supporting materials, creating their own learning path” (Martín-Monje et al., 2018, p. 255).

Besides, it is advised to create shorter, modular courses to improve student retention (Ferguson et al., 2016), since the high drop-out rate is one of the criticisms that have been made to MOOCs, and it is also convenient to include an introductory module explaining how the LMOOC works. It has already been stated that the duration of these LMOOCs is usually 4–6 weeks, and normally the number of modules matches the number of weeks. The scaffolded structure, with both core and extra content, should allow participants to create their own learning itineraries, and course creators should consider the possibility of leaving the LMOOC open without forum facilitation for some extra time, so that late finishers can complete the learning program.

### **Learning Objects**

Most MOOCs and LMOOCs are based on micro-lessons, which are delivered through short video clips and followed by related exercises, activities, and textual resources (Gimeno-Sanz, 2021). Videos are the main form for delivering content in EFL/ESL MOOCs and have proved to be the most powerful learning objects (Martín-Monje et al., 2018). Consequently, certain considerations must be taken into account to create high-quality videos for an LMOOC:

- The videos should provide instances of real language and include a wide range of communicative situations (Çakir et al., 2006).
- Language instructors should bear in mind that high-quality pre-recorded classroom lectures, which may have been excellent in a face-to-face learning scenario, might not make engaging online videos (Guo et al., 2014), and should thus be avoided.
- According to research, the ideal length for these videos is 5–10 minutes (Khan, 2012).

The second most accessed learning object in LMOOCs is textual resources (Martín-Monje et al., 2018). These resources can be included as core content, but very often they are part of the support materials of the LMOOC and can be downloaded to the learner’s convenience, something that seems to be especially appreciated especially by students (Agonács et al., 2019).

### **Assessment Tools**

Assessment is an integral part of online language courses, such as LMOOCs (Russell & Murphy-Judy, 2021). Whereas in face-to-face contexts a wider range of assessment tools can be used, in massive contexts the choice is reduced mainly to peer-to-peer (P2P) assessment and computer-scored tests. P2P assessment has been proposed as the ideal type of formative assessment in MOOCs (Suen, 2014), and in LMOOCs specifically it has been recommended for the evaluation of oral and written productive skills (Martín-Monje et al., 2018). However, there have been issues with the credibility of P2P feedback (Suen, 2014), since some students feel that their peers are not necessarily knowledgeable enough to gauge their progress in the course. Besides, the inclusion of P2P activities in MOOCs has been associated with a lower success rate (Ferguson et al., 2016), and since assessment submission is strongly linked to course completion in LMOOCs (Martín-Monje et al., 2018) many course creators have opted for leaving the P2P activities as optional ones or dropping them altogether.

The most favored form of assessment, consequently, are computer-scored tests, not only in MOOCs in general, but also in LMOOCs (Rubio et al., 2016; Sokolik, 2014). Grading is generally provided as well, and students can check their progress through an automatic system (Gimeno-Sanz, 2016). This is far from ideal and there have been some attempts to provide more adaptive self-assessment activities for LL (Hashim et al., 2018), but none of them have been satisfactory enough and this remains an outstanding issue in LMOOCs.

### **Communication Tools**

There seems to be agreement that a powerful set of communication tools is one of the defining features of successful LMOOCs (Sallam, 2020), but literature shows that course instructors opt for different combinations. Synchronous tools such as videoconferences may be useful to offer the students the possibility to practise their English in a real context in which interaction takes place at the same time, but it is often difficult to handle different time zones in truly massive MOOCs (Castrillo et al., 2018).

Tools for asynchronous interaction seem to be more popular, and they have proved to have an educational value in online LL, promoting students' conscious reflection on learning and learner autonomy (Lamy & Goodfellow, 1999). In MOOCs, most interaction takes place in forums, but in the case of truly communicative LMOOCs there is an added difficulty in the fact that students use the medium of instruction (L2) as the medium of communication as well (Martín-Monje et al., 2017; Sokolik, 2014). As for social networks, some studies have highlighted their effectiveness for LL in LMOOCs, e.g. Facebook (Ventura & Martín-Monje, 2016). Anyhow, whatever the choice of the communication tools, the creation of a learning community must lie at the core of LMOOCs (Rubio et al., 2016), and that means avoiding leaving students to their own devices. These communication tools -be it videoconferences, forums, or social networks- must be facilitated or managed by some instructor presence.

### **Learning Strategies**

To the author's knowledge, there is only one publication that explicitly deals with the inclusion of learning strategies in an LMOOC (Luo, 2020), but the conclusions reached show that it may be beneficial for LL in these aspects: (1) less cramming in students' language revision; (2) more spaced practice; (3) use of different study modes; and (4) a more efficient online LL. Thus, it is advisable for LMOOC designers to explore this knowledge gap, since it will probably aid in keeping students' engagement and enhancing their progress in the foreign language.

### **Added Functionalities**

Since the emergence of LMOOCs it has become clear that standard MOOC platforms are not ideal for this type of courses (see for instance Panagiotidis, 2019; Read, 2014 or Sokolik, 2014). The main difficulty lies in achieving effective oral interaction and production, and some authors have opted for inserting extra functionalities into the MOOC platform to convert generic courses into customised LMOOCs. The most successful attempt has been that of Gimeno-Sanz et al. (2017), who added extra functionalities to videos, such as transcriptions, translations and the possibility to reduce the playback speed, included glossaries for scaffolding and also external tools for the speaking activities. This initiative should be followed by other course creators, since these added features truly cater for the specific needs of the language learner in a massive online environment.

## **4 Conclusions**

This chapter has outlined the main advancements in the field of LMOOC research for English teaching and learning, providing an insight into its theoretical foundations, such as openness in education and LL, and social learning, which vertebrates the dynamics in EFL/ESL learning in these digital environments. Taking MOOCs in general as a starting point, the novelty in this educational format has been stated: they are learner-centered, promote autonomy in students, and provide flexibility to the learning process. One of the most appealing aspects of MOOCs and LMOOCs is that participants can set their own learning pace and decide how much or how little they engage with the courses. Besides, they have made quality resources from the most prestigious universities around the world freely available to anyone, anywhere, which is probably the most significant effort that has been made to democratize education in the past decades.

LMOOCs represent an innovative educational initiative in the online EFL/ESL learning scenario, with novel proposals for content delivery (giving prominence to audio-visual resources), tuition (generally free access to content, fees required for premium features or certification), and assessment (highlighting the benefits of P2P evaluation). There has been some reluctance to consider LMOOCs as a valid educational option, but research has brought their benefits to the forefront (Sallam et al., 2020). Besides, their flexible nature makes it possible to implement them in various

learning contexts, ranging from stand-alone courses (the most common ones) to various blends into face-to-face instruction.

The defining features of LMOOCs have also been identified: (1) a scaffolded structure that supports the heterogeneous cohort of students which usually make up LMOOCs; (2) micro-lessons which rely on short videos with linguistic and cultural content in a variety of communicative situations, some related exercises, activities and textual resources which are often offered as extra support materials; (3) assessment tools which mostly rely on computer-scored tests, although P2P assessment has been recommended for the evaluation of oral and written production, and a more adaptive type of assessment would be desirable in these massive courses; (4) communication tools which encourage the creation of a learning community, with a clear preference for asynchronous tools such as discussion forums and, to a lesser extent, social networks; (5) learning strategies, which have not been used extensively so far but research shows that are effective in enhancing online LL; and (6) added functionalities that attempt to overcome the limitations that MOOC platforms have when using them for LL (transcriptions and variable speed in video playback, online glossaries and external tools to practise speaking skills).

Finally, drawn from this reflection on the conceptualization and theoretical foundations of LMOOC research and the best practice that has been highlighted, some guidelines and recommendations can be outlined, which will be useful to EFL/ESL practitioners interested in implementing LMOOCs into their teaching.

Firstly, they should reflect on the learning scenario that best fits their needs: those students who struggle with their formal education program will benefit from using LMOOCs as remedial tools, while more advanced students will be able to expand their knowledge using LMOOC content as extension material. Besides, some EFL/ESL teachers may wish to fully integrate LMOOCs in their syllabi, blending an existing LMOOC into their regular face-to-face classes.

For those who would like to venture into designing their own LMOOC, these are the main recommendations:

- The ideal duration of an LMOOC is 4–6 weeks.
- Content should be delivered mainly through short videos which include real language in diverse communicative situations, and they should be followed by related activities.
- Textual resources are also relevant, but they tend to be used as downloadable support materials, not as core content.
- Assessment is generally limited to P2P assessment and computer-scored tests. The latter is the most common one and easiest to implement, but this is far from ideal, so other forms of assessment should be sought in the future.
- A powerful set of communication tools is essential in an LMOOC. Forums are the main means of interaction, but some courses include videoconferences, so that participants can interact synchronously. Also, course designers should consider the inclusion of social media since they have proved to foster the creation of a learning community. Whatever the choice of communication tools, a key



aspect is to have them facilitated by an instructor, in order to avoid the feeling of isolation that these online courses may generate among participants.

- The inclusion of some learning strategies in the LMOOC has a positive effect on the LL process, so it should be further explored and implemented by course designers.
- The MOOC platforms that are currently available have some technical limitations which make the creation of an LMOOC a challenging task, but some authors have successfully inserted plug-ins, such as glossaries, external tools to practise speaking skills, or extra functionalities to enhance LL with the videos (e.g., transcriptions, translations, or reduction of playback speed).

Finally, it is hoped that this chapter contributes to consolidate LMOOC research, providing valuable support to teachers, course designers, and researchers interested in this new sub-field of CALL. It encompasses both its theoretical underpinnings and the pedagogy and characteristics of LMOOCs, with a special focus on EFL/ESL teaching and learning, and provides relevant guidance for educators interested in offering their courses via LMOOCs.

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# A Model for Scaffolded Technology-Enhanced Oral Communicative Tasks



Austin Kaufmann, Adam Gacs, Luca Giupponi, and Koen Van Gorp

**Abstract** The chapter describes a model for the design and implementation of oral communicative tasks. This task-based language teaching model connects asynchronous and synchronous online language instruction to foster language learning (with a focus on oral communication) through incremental task progressions. The model grew out of professional development innovations and years of pre-pandemic online and remote teaching practices at a large U.S. university. What sets our model apart is the purposeful scaffolding of a series of thematically and linguistically related interactive tasks, enabling students to develop the skills and confidence necessary to engage productively in the core interpersonal task. Specifically, the core interpersonal synchronous task is bookended by two related asynchronous presentational tasks. The model is centered on ensuring optimal use of synchronous time for spontaneous communication between students as they complete a task cycle that accommodates technology-enhanced task-based language teaching (TBLT). A sample lesson on the topic of online furniture shopping and decision making is provided to demonstrate how the model and its task sequence may be implemented. Suggestions for optimizing the model for different instructional contexts and varying pedagogical approaches round out the chapter.

**Keywords** Oral communicative tasks · Task-based language teaching (TBLT) · Model · Scaffolding · Online teaching

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## 1 Introduction

In March of 2020, when the pandemic closed down face-to-face classes on university campuses around the world, many U.S. university programs, departments, and instructors scrambled to prepare for the sudden switch to fully online instruction. They turned to their universities and to their instructional technologists for help, who for the most part responded admirably with technology support and pedagogical guidance for Emergency Remote Teaching (ERT) (Hodges et al., 2020).

English as a Second Language (ESL) programs in post-secondary settings struggled perhaps even more than other departments, having had less experience with and a shorter history of online instruction. These programs have historically focused on offering a fully immersive, residential experience to foreign students who wished to study at an US university but didn't yet meet the minimum language proficiency requirement. As such, prior to the pandemic, relatively few university Intensive English Programs (IEPs) had established online programs, due in part to visa requirements which stipulate that international students take in-person courses. Further, teaching and learning languages online requires a nuanced set of skills and tools and a different pedagogical approach (Compton, 2009; Goertler, 2019; Sun, 2011; Van Gorp et al., 2019).

Online education has had a steady enrollment increase across the U.S. since 2002 (Seaman et al., 2018) in many disciplines and, contrary to most ESL programs, some world language programs had established a foothold in the online world since early 2010s. Online instruction for modern language programs (that is, foreign or world languages) began on many campuses as an additional flexible alternative to on-campus instruction, often consisting of just a few sections running parallel to their face-to-face (F2F) or hybrid/blended counterparts (Murphy-Judy & Johnshoy, 2017), with first-year language courses being the most frequent ones offered. Less Commonly Taught Language (LCTL) instructors (i.e., languages other than Spanish, German and French) had also, by necessity, explored online and blended-synchronous models (Girons & Swinehart, 2020) of language instruction in their efforts to attract sufficient student numbers from across multiple campuses. It was to collaborative initiatives like these, and to Language Centers (LCs) and/or Teaching and Learning Centers (Giupponi et al., 2021), that many university ESL programs turned for guidance even before the pandemic-induced shift and more intensely after.

Out of this guidance came a model for scaffolded technology-enhanced oral communicative tasks connecting asynchronous and synchronous online language instruction through incremental task progressions. This model is the focus of this chapter. After a brief section discussing its origins, we situate the model within the discussion surrounding task-based language teaching and technology mediated tasks. Then, we describe the model in detail and walk the reader through an example sequence of tasks meant to illustrate the features of the model for the design and implementation of oral tasks. We conclude with some considerations for applying the model in various contexts.

## 2 Model Origins

Answering the urgent need for guidance in principled and intentional online language instruction, Michigan State University's English Language Center (ELC) and Center for Language Teaching Advancement (CeLTA) launched the Online Language Teaching (OLT) Initiative (<https://olt.cal.msu.edu>) in an effort to move language instructors (both ESL and foreign/world languages) beyond stop-gap emergency teaching mode measures. The long-term hope was to reduce faculty skepticism towards the effectiveness of online instruction and to embrace the affordances of flexible online pedagogical approaches.

Importantly, the OLT Initiative aims to tie instructional design expertise to strong language teaching pedagogy while still meeting the day-to-day needs of practitioners. Multiple studies have argued that comparable learning outcomes can be achieved in online language courses (Blake et al., 2008; Enkin & Mejías-Bikandi, 2017; Goertler & Gacs, 2018; Grgurović et al., 2013; Isenberg, 2010), but not without significant changes to pedagogy and course design. The way online instructors scaffold learning, offer instructions, model expectations and the language itself, and provide feedback are all necessarily different, requiring new approaches for designing lessons and facilitating language tasks. Decades of research have shown that effective online learning does not just happen; it is the result of intentional instructional design decisions and iterative planning and development (Branch & Dousay, 2015).

Surveys and personal interactions with OLT Initiative participants offered the authors new insights into the needs of university language instructors. Specifically, many language instructors were finding success facilitating presentational speaking exercises using interactive video/audio “discussions” (e.g., Flip, Voicethread) that added interactivity and community building. However, these tasks—with their delayed, asynchronous approach—were often limited to the read or rehearsed language of *presentational* speech. *Interpersonal* activities, requiring real-time processing and negotiation of meaning, were much more difficult to design, especially for those instructors lacking a clear pedagogical model for scaffolding communicative language learning online.

The clarity and urgency of this need to facilitate spontaneous interactions prompted the OLT Initiative to develop an additional advanced course, *Oral Communicative Tasks in Online Language Teaching* (<https://olt.cal.msu.edu/oct>). This course was designed to help instructors identify best practices for how to execute both synchronous and asynchronous oral communicative presentational and interpersonal language tasks, and to develop scaffolded, incremental task progressions and assessments. The model for the design and implementation of oral tasks presented in this chapter addresses this specific need of the instructors and forms the backbone upon which this course was built. Although this model could be used for all kinds of language tasks (presentational, interpretive, and interpersonal), the focus of this chapter is on oral interpersonal tasks.



### 3 Task-Based Language Teaching

As tasks are central to the model, we turned to Task-Based Language Teaching (TBLT), a prominent approach to language teaching and learning that has also gained some traction in the world of online language learning (González-Lloret, 2016; Guo & Möllering, 2017; Thomas & Reinders, 2012; Ziegler, 2016). TBLT has been around since the 1980s and has become somewhat of an umbrella term. Not unlike communicative language teaching (East, 2021; Thornbury, 2016), different versions of task-based teaching—sometimes referred to as *strong* and *weak* versions of TBLT—have emerged, with the weakest form also labeled *task-supported* language teaching (TSLT; East, 2021; Ellis, 2017). Strong interpretations of TBLT (Long, 2015) call for a fully task-driven curriculum based on needs analysis and tasks that feature no predetermined language focus. However, most of the university IEP and modern language instructors we encountered were working within the framework of sequenced courses that featured preset curriculum with specific associated language outcomes. Therefore, these language instructors often prefer task-supported curricula, which allow for specific vocabulary and grammar to be first introduced and then practiced under more authentic task conditions. Indeed, González-Lloret and Ortega (2014) note that in most F2F classes, instructors might introduce tasks sporadically, but they do not consistently design complete courses around tasks. In that sense and for these instructors, task-supported language teaching is typically focus-on-forms teaching, where tasks are used to practice predetermined grammatical structures (Long & Robinson, 1998); these grammatical structures may first be introduced explicitly following a traditional Presentation-Production-Practice (PPP) paradigm.

Nevertheless, our interactions with instructors led us to conclude that many instructors want the authenticity and the real-world outcome-focused approach of task-centered online learning, but need the flexibility of a model that fits into their curricular paradigm and allows for tasks designed to elicit the use of particular lexical items or grammar structures. While some focus on these items and structures may be pre-selected, instructors are looking to replace decontextualized isolated language practice (i.e., the typical exercises in the Production phase of PPP) with task preparation and performance where students need to rely on whatever language they have at their disposal (González-Lloret, 2020), or their own linguistic resources, as Ellis (2003) puts it, aligning themselves with a stronger task-based approach. Students' actual language use further informs the follow-up language analysis and feedback.

### 4 Defining Technology-Mediated Tasks

The definition of *task* adopted in this chapter follows those of González-Lloret and Ortega (2014) and González-Lloret (2020). Technology-mediated tasks:

1. *focus primarily on meaning*. Learners are engaged with the task and its overall content and outcome and not preoccupied with using certain linguistic forms or structure.
2. *are goal oriented*. There is a goal and communicative purpose to the task itself that requires negotiation and an open outcome that can be reported back, and not just the display of rehearsed language.
3. *are learner centered*. The task addresses learners' needs and wants, based on some form of needs analysis; the task engages learners' linguistic and nonlinguistic resources in addition to their digital skills, creating a flexible and diverse task process that fosters language learning opportunities for all learners.
4. *are as authentic and representative of the real world as possible*. The task draws on real-world processes of language use, that is, allowing learners to connect form, meaning and function.
5. *are opportunities for reflective learning*. Through its experiential and open nature, the task affords learners opportunities for reflective learning.
6. *promote true collaboration and learner interaction*. The task should facilitate collaborative work and peer interaction using technology effectively and efficiently.

As the definition of *task* is central to TBLT and to a good understanding of what a technology-mediated task is, it is important to clearly distinguish a *task* from a *non-task* or classroom *activity*. The definition of *technology-mediated* tasks seems simple and clear enough; however, putting theory into practice always leads to reinterpretations. Furthermore, as TBLT became popular, instructors and textbooks alike increasingly began adopting the term “task” to rebrand their old classroom activities. To avoid the conflation of terms, we would like to differentiate language *activities* from *tasks* with an example that we used in the Oral Communicative Tasks course and that our students found clarifying.

What differentiates the task example from the activity example in Table 1 is a clear real-life purpose (meeting criteria 2, 3 and 4; deciding on the right gift and finding it online versus an ill-defined reason for talking about family members) and a sustained focus on meaning (criterion 1; without an explicit, pre-planned focus on grammatical structures or vocabulary, focusing on form only if a student requests

**Table 1** Activity versus task

Activity	Task
Students describe their family members' and/or friends' interests. The goal is to practice certain structures ( <i>she likes/dislikes; her hobby is...</i> ) and vocabulary (family relations, hobbies), but the activity does not go beyond that. Students might conduct interviews and present on their own or others' families.	Students share birthdays that are coming up in their family/circle of friends within the next few weeks or months. They describe these people and their interests/hobbies to their partner and ask for advice about what gifts to buy them. Next, students discuss where to buy the suggested gifts online, visiting relevant shopping sites and selecting items. Afterwards, the students present their choices to the class and reflect with the teacher on the decision-making process.



it). Through collaborating with classmates, students receive more varied suggestions for presents (criterion 6; welcoming advice in a real two-way flow of information task versus a “sterile” description of family members in what is actually a one-way flow of information activity). Finally, the students get the opportunity to reflect on their decision-making process together with their peers and the teacher and may receive feedback from the teacher on both process and outcome (criterion 5).

## 5 Existing Technology-Mediated TBLT Models

Building on the work of González-Lloret and Ortega (2014), Baralt and Morcillo Gómez (2017) were among the first to create a methodological framework to train teachers to facilitate TBLT online. They adapted Willis’ (1998, 2012) framework of pre-task, task cycle (task, planning, report), and post-task language focus (analysis and practice) for online synchronous video-based interaction. To apply the Willis’ framework online, Baralt and Morcillo Gómez (2017) moved the report stage of the task cycle as well as the analysis stage of the language focus to a video-based online meeting; the other phases (pre-task, task and planning in the task cycle, and practice in the language focus phase) were done individually by the learner at home. By providing pedagogical guidance for teachers to lead technology-mediated tasks online and illustrating how socialization and community building can be achieved following Willis’ TBLT methodology framework, Baralt and Morcillo Gómez (2017) made an important contribution to technology-mediated TBLT and showed how tasks can be applied to synchronous classroom interaction.

However, the Baralt and Morcillo Gómez (2017) TBLT model and their examples feature primarily *presentational* tasks and smaller groups of two to four students. As pointed out earlier, the pandemic and OLT course evaluations identified the need for more *interpersonal* communication tasks and a more comprehensive, adaptable model meeting the diverse needs of language instructors and their students, especially as class sizes for online language classes were expected to remain close to their F2F counterparts or even increase in many cases. While online language classes before the pandemic were usually capped lower than F2F or hybrid sections to account for technology limitations, manageable classroom community, and more individual meaningful feedback, there have also been cases of larger online language classes for budgetary reasons (Russell & Curtis, 2013). In our experience and through feedback from our course participants, we would argue that the following model is best suited to online sections of 12 to 16 students.

## 6 Model for Scaffolded Technology-Enhanced Oral Communicative Tasks

Here, we introduce our model for scaffolded technology-enhanced oral communicative tasks. After laying out the model briefly in table format, we describe the model by offering an annotated sample lesson. A discussion of model flexibility and additional considerations follows.

At the center of our model for scaffolded technology-enhanced oral communicative tasks lies an interpersonal task, the cornerstone of an online module or unit. This objective-driven core task demands spontaneous, negotiated interaction from students and is mediated via synchronous telecommunication. This core task centers around an extended small group communicative exchange during which students complete a given task together in breakout rooms. Beforehand, the instructor facilitates a warmup and modeling session, and afterwards students have a chance to engage in a live debrief and reflection.

One key feature of this instructional design model is its carefully sequenced interplay between the synchronous and asynchronous modalities and the different ACTFL modes of communication (See Table 2). Specifically, the core interpersonal synchronous task in our model is bookended by two related asynchronous presentational tasks. The preceding task is both thematically and linguistically linked to the core task, while its asynchronous and presentational nature allows students ample time to plan, rehearse, and—importantly—to receive feedback from the instructor (and/or peers). Likewise, the subsequent asynchronous reporting task allows further relevant language use and opportunity for reflection, peer and self-evaluation, and instructor feedback.

What sets our model apart is the purposeful scaffolding of a series of related interactive tasks, enabling students to develop the skills and confidence necessary to engage productively in the core interpersonal task. During the preliminary task, students can be exposed to language models, interact with each other asynchronously, and receive instructor (and/or peer) feedback. Our model extends the post-task reporting phase, as well, to include a follow-up asynchronous reporting task

**Table 2** Model for scaffolded technology-enhanced oral communicative tasks

Preliminary task	Core task	Follow-up task
Asynchronous	Synchronous	Asynchronous
<p><b>1. Instructions and modeling</b> (e.g., asynchronous video discussion tool, prompt, and example post)</p> <p><b>2. Preliminary presentational task and peer responses</b> (e.g., asynchronous video discussion tool)</p>	<p><b>1. Task instructions and modeling</b> (e.g., meeting platform, main room)</p> <p><b>2. Task completion</b> (e.g., meeting platform, breakout rooms)</p> <p><b>3. Debrief and follow-up task instructions and modeling</b> (e.g., meeting platform, main room)</p>	<p><b>1. Follow-up presentational task and peer response</b> (e.g., asynchronous video discussion tool, prompt, and example post)</p> <p><b>2. [Optional] interactive delayed feedback video</b></p>

that similarly features sample models, interactivity, and opportunities for feedback. In a sense, our model provides structure for extending the application of the task *cycle* to a larger instructional design unit, creating a seamless task *series* that can be readily facilitated in an online teaching modality. The task progression we outline in our model comprises more than a single instructional contact hour and should be considered as a possible sequence typical in a hybrid/blended or bichronous class (Martin et al., 2020). The preliminary or follow-up tasks would be independently completed by students before and after the synchronous engagement as a whole class. The sequence could last from 3 days to a whole week, as we also realize that some programs have limited time to infuse their curriculum with such an expanded series of task sequences. It would be possible to focus on the core task alone with slightly modified setup and follow up, especially if the contact hour is longer than the typical 50 minutes of language classes.

## 7 Online TBLT Example Lesson Following the Model

### 7.1 Curricular Context

Following the description of our model for the design and implementation of oral tasks, we now offer a detailed sample lesson as an illustration for how the model could be implemented. To situate our sample lesson in a realistic context, we begin with a set of curricular goals, in our case patterned after ACTFL's (2021) Proficiency Benchmarks and Performance Indicators, as these can be applied to both second and foreign language learning contexts.

Lessons do not exist in a vacuum but are delivered in a sequence within the context of larger curricular units. Our example lesson is no exception. While this task series centers on oral communicative tasks and does not explicitly dictate what types of initial language learning might need to precede it, the nature of the oral tasks assumes that students come to the task with some background knowledge and language. The cornerstone synchronous task of this lesson, which involves groups of students searching through shopping websites in the target language and negotiating the selection of home decor or furniture items to suit personal tastes, assumes that students have an understanding of how online shopping and meeting platform collaboration works, and some ability to recognize and use language for furniture, to express likes and dislikes, and to offer simple praise and advice. Intentionally designed online courses that are not completely task-based may have some materials pre-developed by instructors (using tools such as vocabulary learning apps, interactive lesson authoring software, and video-based formative quizzes) for asynchronous preparatory work to be completed by students independently.

## 7.2 *Course-Level and Module-Level Objectives (CLOs and MLOs)*

The following are the course- and module-level objectives (in form of Can-Do-Statements from ACTFL's Proficiency Benchmarks and Performance Indicators) (American Council on the Teaching of Foreign Languages [ACTFL], 2017) targeted in the example lesson that we describe in detail below.

### **Course-Level Objectives (CLOs): Novice-High Can-Do Statements**

- (CLO 1: Presentational) I can express my preferences on familiar and everyday topics of interest, using simple sentences most of the time.
- (CLO 2: Interpersonal) I can express, ask about, and react to preferences, feelings, or opinions on familiar topics, using simple sentences most of the time and asking questions to keep the conversation on topic.

### **Module-Level Objectives (MLOs): Novice-High Can-Do Statements**

- MLO 1: I can identify and describe simple details about my environment and discuss my possessions. (CLO 1)
- MLO 2: I can describe and explain personal preferences related to furniture and household items and my reasons for my preferences. (CLO 1)
- MLO 3: I can ask and answer questions about furniture and household item preferences and my reasons. (CLO 2)
- MLO 4: I can ask for and offer advice regarding making decisions and purchases. (CLO 2) (Table 3)

## 7.3 *Preliminary Asynchronous Task: Presentation of a Favorite Location and Items*

In the day(s) before the synchronous session, via an asynchronous video discussion tool, students use their devices to record a 1- to 2-minute “tour” of one room of their house, apartment, dorm room, favorite study spot, or other location. (Describing a room while annotating a digital photo of the room—circling pieces of furniture, drawing arrows, and/or adding text annotation—would be a viable alternative.) As they record, students should describe the furniture and decorations they have, identifying which items are their favorite and least favorite items and why, and what may be missing from their rooms. Students might already browse a target language website (from a curated list provided by the instructor) for possible room upgrades or changes and share some items they've added to their virtual shopping carts. By doing so, students not only set the scene for the core task thematically, but also at least partially prepare themselves for the linguistic and discourse demands of the core task (e.g., describing their room, identifying favorite items, suggesting new items) by engaging with linguistic and external resources like the target language website, dictionaries and so on. Students then reply to three or more classmates with

**Table 3** Example lesson applied to the model

Preliminary task	Core task	Follow-up task
Asynchronous	Synchronous	Asynchronous
<p><b>Instructions and modeling</b> T posts prompt in LMS. T offers sample posts and example replies within asynchronous video discussion tool.</p> <p><b>Preliminary presentational task and peer responses</b> Ss record a tour of their room (highlighting favorite &amp; desired/needed items). Ss reply to others' posts with video comments and compliments.</p>	<p><b>Task instructions and modeling</b> T facilitates student-centered vocabulary warm-up. T introduces the task (instructions, outcomes, modeling). Ss ask clarification questions.</p> <p><b>Task completion</b> T opens breakout rooms. Ss review preliminary task results and desired/needed items. Ss negotiate search results via screensharing, selecting possible items based on their budgets, tastes, and preferences. Ss capture screenshots of top two favorite purchase options, pasting them into the Google slide deck. T monitors group progress via the slide deck, using it to inform breakout room visits.</p> <p><b>Debrief and follow-up task instructions and modeling</b> Ss reflect and/or report on task outcome and challenges encountered. T highlights linguistic patterns (and/or errors). T introduces and models the follow-up task.</p>	<p><b>Follow-up presentational task and peer responses</b> Ss report their top two choices selected from peers' suggestions within asynchronous video discussion tool. Ss explain how well these choices would meet their criteria of suitability and affordability. Ss invite peers to help them decide which item to purchase. Ss reply to others' posts with advice.</p> <p><b>See additional follow-up ideas in 7.8</b></p>

video comments and compliments of 30 seconds to 1 minute, offering suggestions with URLs to specific suggested items. By doing so, they activate the language (e.g., offering suggestions) they will need to engage in a dialogue with other students in the synchronous core task to come. Asynchronous output-based tasks like this afford students planning time and self-reflection opportunities, provide them with various peer input, and generally activate and scaffold the language use necessary to be successful in the synchronous speaking task to come.

## ***7.4 Accompanying Task Support and Live Session Document***

Via the course LMS, the instructor shares with the students an interactive session document, in this case perhaps a Google slide deck. This interactive document allows relevant session content—agenda, task descriptions, resources/links, embedded video examples, etc.—to be available to students before the synchronous session (for task preparation), during the session (for reference, as needed), and after the session lesson (for review). For example, the instructor may embed a video of their own example of two people completing the core task for students to view asynchronously, prior to the session. But with the video already linked or embedded into the slide deck, it would be available for review within the session itself, as needed, via screen sharing. Further, links to target language shopping websites could be collected in this document as well, affording instructors a convenient way to curate and share these links while allowing students the opportunity to investigate them prior to the lesson. Depending on the instructor’s pedagogical preferences, relevant vocabulary or grammar structures may be added to this document, allowing students the opportunity to engage with them prior to class and/or revisit them as a resource during the session itself. Links to the preliminary asynchronous video discussion task (and/or other preliminary tasks) might also be included for the sake of continuity within this task series.

## ***7.5 Core Task Synchronous Session: Online Shopping and Advice Giving (50 min)***

### **1. Welcome and Warm-up (Main Room, ~10 min.)**

The main focus of the initial part of the session is for the instructor to facilitate a student-centered warm-up activity that invites students to gather/recall relevant lexical phrases used in the preliminary task. Students might share these verbally and/or add them to a slide within the session document, to a virtual whiteboard, or to the chat. The instructor might mention highlights from the asynchronous videos or recognize common threads from among responses before easing into the main task.

### **2. Task Instructions and Modeling (Main Room, ~5 min)**

Building upon the preliminary asynchronous task, the core synchronous task (to be completed in groups of three in breakout rooms) asks students to visit online stores (in the target language) and select items for the redecorating of their various rooms. To facilitate this, the instructor shares relevant links to online stores (e.g., the IKEA webpage in the target language), explains the task prompt (to ask for and receive suggestions for items to purchase for redecorating), identifies the required outcome (screenshots of their top two choices in their online shopping carts or URLs of their top two selected items), and models how students might collaborate to complete the task by acting out the roles or by playing

a sample video. (e.g., *Which lamp should I get? I think you should get an LED lamp because... Is there a cheaper model? What about this one? Ooh yeah! And that one matches the colors in your room! Etc.*).

During the modeling or sample video, the instructor might ask students to note down useful phrases they hear, or following the model, the instructor might elicit suggestions for additional or alternative phrases from students, collecting expressions in the chat or on a virtual whiteboard and transferring them to the session document. Depending on their pedagogical approach, some instructors might refrain from any explicit focus on form; others may choose to review or highlight particular structures and useful lexical phrases through input enhancement and make that information available during breakout rooms by including it in the shared session document. Students are invited to comment and ask clarification questions before moving to breakout rooms. By modeling the task process and helping students notice some of the discourse demands of the task (e.g., questions, suggestions, comparisons, etc.), the instructor builds on the language the students already activated in the pre-task and scaffolds the students' upcoming task performance.

### 3. **Task Completion** (Breakout Rooms, ~20 min)

In their groups of three, students first review (or repeat) highlights of the short video "tour" (or show an image to save time) of the room of their house, apartment, or other location that they're thinking of redecorating (because they may be partnered with students other than those they interacted with in the preliminary asynchronous video assignment). They may also report some comments or item suggestions they had already received. The similarity between the preliminary asynchronous task and the first part of this synchronous task is intentional; it can help students gain confidence and develop fluency, as well as impact the complexity and accuracy of their language use in a positive way. It also allows students to incorporate feedback and suggestions received from their peers or their instructor. This step could be omitted due to time constraints when planning the session, as instructors can best estimate the time their students may take with the core task.

Then, taking turns screen sharing (limited to 3–5 minutes each), students visit relevant shopping pages in the target language (e.g., the IKEA webpages for bedroom furniture, living room decor, or home office accessories). Students could already have a few pre-loaded tabs or a list of URLs for specific products or product categories from the preliminary task, especially if websites need to be displayed in the target language and may not by default. During this interaction phase, students are engaged with the task at hand: helping each other select the best item(s) for their rooms based on their budgets, tastes, and preferences. For many students this may be the most challenging phase of the task as it requires active listening, extended turns, and following up on their partners' ideas. This last step is especially important to emphasize, as students should not be passive listeners awaiting their turn to screen share but be active participants. Not only should they follow up with questions and reactions, but they might also take notes, react via emoticons, or type suggestions in the chat. Again, the outcome



they must achieve is the gathering of screenshots or URLs for their top *two* choices of the pieces of furniture or decor items that might be most suitable and affordable (i.e., the task completion criterion). Students should keep a record of what items they're considering, by gathering items and prices, cutting and pasting URLs, or—most authentically—adding items to their digital “shopping carts” and screen capturing them. They need to agree on which group member(s) would be gathering that info while another shares their screen. Separate session document slides might be prepared for each group ahead of time, into which students could copy and paste their shopping cart screenshots to offer evidence that they have completed the real-world outcome of the task before leaving the breakout room.

As desired, students might also be asked to record these breakout room interactions and submit video links to their instructor. Guided self- and peer evaluations and instructor feedback on these recorded sessions can be invaluable and may provide students greater motivation to remain on task and in the target language. Throughout the task completion stage, the instructor might visit various breakout rooms, listening in, perhaps with microphone and camera turned off for minimal interruption, or occasionally offering encouragement through non-verbal reactions or formative feedback and error correction via chat or audio/video, as deemed necessary. The instructor can inform their breakout room visits by monitoring student progress in the shared interactive session document.

#### 4. Debrief and Follow-up Task Instructions and Modeling (Main Room, ~10 min)

After students return from breakout rooms, the instructor reviews the previous task, perhaps inviting students to report back on highlights from their group discussion and identify challenges (linguistic, personal, technological) they may have encountered when completing the task. This may be difficult to do in the target language for Novice High speakers, so the instructor could help by sharing a quick poll with simple L2 statements to react to. The instructor might also identify patterns of errors or particularly helpful strategies they observed in the breakout rooms. If the instructor plans to create a follow-up video to address a relevant language focus or observed error patterns—one of the optional follow-up strategies in our model (see 7.8 below)—the instructor would want to introduce that here and remind students where and when to look for that video.

The instructor must reserve enough time to introduce the follow-up task or, alternatively, direct students to view a pre-recorded video with the follow-up task instructions, the latter option freeing up more synchronous class time for student questions or reporting. Keeping with a focus on oral communication, for this follow-up task, each student must once again use the same asynchronous video discussion tool used earlier, this time to record a video identifying (a) the general item or piece of furniture they were looking for and (b) the top two choices that they selected from all the suggestions received during pre-task and core task, and (c) explaining how well these choices met their criteria of suitability and affordability. Then, the instructor should model this reporting task, post a video modeling it, and/or embed it in the session document. Students are invited to comment

and ask questions, or may be asked to fill out a brief reflective exit questionnaire before leaving the Zoom session, and are reminded of Office Hours availability.

## **7.6 *Post-session Instructions***

Updated resources should be posted to the interactive session document available to students, including in it any relevant content from the saved chat log from the synchronous session. Links to the follow-up asynchronous video discussion task, along with LMS link to the recording of the synchronous (main room) session (as desired), should be included within this document. Depending on the instructor's pedagogical preferences, links to relevant content or language that emerged during the session may be added, affording students the opportunity to revisit them in a timely fashion. Given that these documents are editable by all, instructors might want to encourage further student contributions.

## **7.7 *Post-session Asynchronous Follow-Up Task: Helping with and Making the Final Purchase Decision***

Using the asynchronous video discussion tool's image sharing or screen recording features, students share the shopping cart images of their top two choices and offer their classmates the pros and cons of each item, according to the criteria of suitability and affordability. Each student's report should end with a request for advice from their classmates regarding which of the two pieces of furniture they should purchase. This follow-up task might be due the day following the synchronous session. Students would then be given an additional day to reply to three or more classmates' posts, offering their purchase advice and rationale by means of the asynchronous video tool's comment feature. This asynchronous task extends the task scope and increases students' language production without requiring additional class time, and the request for advice and subsequent recommendations provide the meaningful purpose for an authentic, real-world task.

## **7.8 *Additional Follow-Up Ideas to the Core Synchronous Task***

- The instructor leads a meaning-focused review of the task upon the core task completion in the main room by reviewing some of the results (website screen shots) together with students, eliciting comments and clarification questions from all. Such a step helps in identifying trends in students' decisions, or in highlighting particularly unique or interesting selections. This also allows the

instructor another opportunity to focus on relevant structures and strong language use in a meaningful context, offering students additional input opportunities and repeated exposures to targeted language or speech acts.

- The instructor prepares and shares a delayed feedback video that has a language focus (Willis, 1998, 2012). The video might generalize the most frequently occurring language errors generated by students during the synchronous session, offering more concise, more accurate, or more commonly used wordings. The video might also feature visual input enhancement to make more salient excerpts of student utterances that modeled particularly effective use of appropriate language structures. When feasible, interactive video with strategically timed review questions or embedded exercises should be used to increase student engagement.
- Students repeat a similar task with a different partner after practicing additional words, phrases, or patterns highlighted in the follow-up feedback video in order to add complexity, build fluency, and gain confidence.
- The instructor offers asynchronous practice activities that lead students to practice—in speech or in writing—the new words, phrases, or patterns highlighted in the above delayed feedback video.

## 8 Additional Considerations

### 8.1 *Language Focus*

The flexibility of our model facilitates multiple approaches to focusing on language, allowing various placements of and roles for language focus, as illustrated above in the diverse way teachers and students can use the session document. Whereas most instructors would agree that focus on form is important, how the instructor chooses to focus on form (Doughty & Long, 2003) is a matter of pedagogical preference. A strong version of TBLT (Long, 2015) avoids a predetermined language focus, only addressing language structures and vocabulary as they arise and are needed for task completion. However, as Long (2015) points out, how focus on form is realized in the classroom is best left to the teacher. Teachers have multiple pedagogical procedures at their disposal. There is not a universal pedagogical approach that fits each instructional context.

In the context of synchronous online instruction, with larger classes divided into simultaneously meeting breakout rooms, immediate “just in time” language focus isn’t always feasible or practical. Further, for a fully online course that balances asynchronous and synchronous instruction, there are likely ample asynchronous class materials or textbook content that may already prompt students to engage with certain language forms prior to videoconferencing. In order to accommodate this, the model allows for multiple approaches to language focus.

As above, when we noted in 7.1 that preliminary input-based independent learning activities would reflect the instructor's pedagogical preferences, here we suggest that multiple language focus approaches might be applied to our model:

- Advocates of strong TBLT might suggest that the instructor monitor breakout room activity, addressing language, noting student interactions in order to highlight effective language use, common errors, or alternatives that would allow students to more effectively complete the task. A more careful but more time-intensive option would be for breakout room tasks to be recorded and then reviewed by the instructor; this would lead to more informed teacher-created delayed-feedback instruction video. But this practice might be too time consuming in some instructional contexts, especially with large class sizes.
- A more traditional pedagogical approach might feature the instructor exposing students to multiple authentic or textbook prepared readings or dialogs that feature relevant language structures, pre-teaching the textbook chapter's language focus content, or anticipating their students' lexical and grammatical needs and preemptively offering instruction via flipped-learning instructional videos and materials.
- Others may take elements of both approaches: pre-teaching targeted elements but also using analysis of student interaction during the synchronous session task to guide and inform additional post-task language focus videos or activities.

In short, instructors should be free to move between *task-based* and *task-supported* language teaching (Ellis, 2019), and our model accommodates this movement.

## 8.2 Assessment

Just as the model itself allows for flexibility in the implementation of this task sequence, there are likewise various options for assessing student performance. First and foremost, we believe that students completing this task sequence would benefit most from ongoing formative feedback by the instructor and/or peers. Some instructor feedback could be offered asynchronously by means of comments (video or text-based) on the preliminary and/or follow-up task video recordings. For the synchronous core task, the instructor might choose to briefly visit each breakout room during the live session, participating meaningfully in the conversation, offering suggestions via chat, or simply observing in order to give delayed feedback.

Another option is to consider the synchronous part of the main task performance (especially if it can be recorded) as a component of regular class participation and use whatever rubric one regularly uses to evaluate class participation. In similar fashion, the preliminary and follow-up presentational tasks may be assessed as part of one's homework or asynchronous work grade. Another viable option would be to chart progress through the entire task sequence via a single task-dependent or task-specific rubric, focusing on task completion, language use and interaction, as seen in Table 4.

If recording the core task in breakout rooms is not desirable or feasible, the instructor might distribute self- or peer assessment forms or surveys to be completed immediately after the main class session or upon completion of the task sequence. Conversely, if the core task is recorded, some instructors may prefer to conduct a more language-focused assessment of the core task, using rubrics developed or adapted for assessing interpersonal communication with criteria that may include comprehensibility, language control, vocabulary use, etc. Likewise, rubrics developed or adapted for assessing presentational communication could be used to facilitate language-focused assessment of the asynchronous preliminary and/or follow-up tasks.

### ***8.3 Hybrid Course Adaptation***

For instructors whose classroom format changes semester to semester, the Model for Scaffolded Technology-Enhanced Oral Communicative Tasks offers an easy adaptation to other modalities. With almost no alterations, it can be applied to hybrid teaching, with face-to-face sessions substituting for the Synchronous portion of the Task Cycle. Students prepare for the face-to-face class by means of asynchronous interpretive and presentational language activities and tasks. During the face-to-face class, they participate in the oral interpersonal task with group members gathering around a shared laptop or tablet in the classroom (in a bring-your-own-device setting) or around a desktop computer in a computer lab. Following the synchronous session, they complete additional follow-up activities, again in an asynchronous modality.

### ***8.4 Time***

Time flexibility is also an important consideration for our model. Typical language classes may meet for 45–60 minutes for each credit hour, and the way these hours could be conceptualized for online or remote delivery may vary considerably in the ratio between asynchronous and synchronous elements. Synchronous time, in fact, becomes just one building block, and one has to carefully plan and estimate the overall time that various instructional activities (tutorials, vocabulary apps, interactive quizzes, asynchronous communication platforms, etc.) would take in order to keep within the allotted credit hour requirements (e.g., 2 hours outside of class for each credit hour = 12 hours of engagement for a four-credit class). Some courses may also feature sessions that meet for a longer duration, so the above model can be adapted for a 60- to 90-minute meeting by extending the preparation and breakout room/debriefing periods.

**Table 4** Task-dependent rubric for complete sequence assessment

	Criteria	Exceeds expectations	Meets expectations	Does not yet meet expectations
<b>Preliminary asynchronous task:</b> Presentation of a favorite location and items	<b>Task completion</b> <b>Language use</b> <b>Interaction</b>	Video “tour,” posted by the due date, is creative, engaging, and of expected length Comprehensible, not read from a script; attempts to connect sentences and use new vocabulary More than the required number of meaningful comments left for others, as specified in task instructions	Video “tour,” posted by the due date, is of expected length Comprehensible, not read from a script; features simple sentences and some memorized phrases Required number of meaningful comments left for others, as specified in task instructions	Video “tour” is not posted by due date and/or not of expected length May be difficult to understand or read from a script Comments left for others are fewer in number and/or less relevant or meaningful
<b>Core task:</b> Synchronous session: Online shopping and advice giving	<b>Task completion</b> <b>Language use</b> <b>Interaction</b>	Virtual cart screenshots and URLs of top two affordable and suitable furniture/ decor items pasted into the session doc by the end of the task Comprehensible and pragmatically appropriate TL production Actively asks and answers questions, offers suggestions, reacts to others’ ideas, and helps maintain on-task group interaction	URLs of top two affordable and suitable furniture/ decor items pasted into the session doc by the end of the task Adequate comprehensible TL production; some less appropriate TL production Asks and answers questions, offers suggestions, and remains on task	Screenshots/URLs of two furniture/ decor items are incomplete or not present in the session doc by the end of the task Language is difficult to understand; insufficient TL production Participates passively or minimally; may engage in off-task interactions

(continued)

**Table 4** (continued)

	Criteria	Exceeds expectations	Meets expectations	Does not yet meet expectations
<b>Post-session asynchronous follow-up task:</b> Helping with and making the final purchase decision	<b>Task completion</b> <b>Language use</b> <b>Interaction</b>	Video addressing suitability and affordability of top two choices, posted by the due date, is of expected length, creative, and engaging Comprehensible, not read from a script; attempts to connect sentences and use new vocabulary More than the required number of meaningful comments left for others, as specified in task instructions	Video of two choices, posted by the due date, is of expected length; may not fully address criteria of affordability and suitability Comprehensible, not read from a script; features simple sentences and some memorized phrases Required number of meaningful comments left for others, as specified in task instructions	Video not posted by due date or not of expected length; may not fully explain criteria of affordability or suitability May be difficult to understand or read from a script Comments left for others are fewer in number and/or less relevant or meaningful

Our model highlights and builds towards the cornerstone synchronous task as well as builds upon it and could be offered in several weekly configurations, including the following:

- Mon, Tues asynchronous; Wed synchronous; Thurs, Fri asynchronous
- Mon, Wed, Fri asynchronous; Tues, Thurs synchronous

## 8.5 *Tools and Platforms*

To meet the needs of the greatest number of language instructors, our example lesson above reflects the technology affordances and limitations of the most commonly used online synchronous teaching platform for our core task: Zoom. Other video conferencing platforms, such as Microsoft Teams, enable the creation of permanent spaces, or channels, that allow students to stay connected with their group members even after the synchronous task concludes. These channels can also be pedagogically exploited by the instructor for the sharing of resources and asynchronous task content, offering solutions for better connecting synchronous and asynchronous tasks and maintaining momentum throughout a task series.

Other platforms, known as proximity-based virtual platforms (e.g., SpatialChat, Gather), offer other affordances within the virtual synchronous meeting space. With proximity-based virtual platforms, users can navigate the instructor-created virtual space freely and have conversations in groups, with audio volume (and/or video



feeds) decreasing the farther one user is from another, allowing for multiple groups within a single space. This feature allows students to form and change groups, or even freely mingle, thereby making better use of class time and increasing the breadth of task types that can be facilitated. Further, the proximity feature enables instructors to navigate more easily between and among small groups in order to monitor participation, offer feedback, and note patterns in students' language errors or examples of effective language use.

In short, language instructors should explore the unique affordances of all available online meeting platforms in order to determine what platform is best suited to their particular approach and needs. Of course, most instructors will be tied to what platform their institution centrally approves, contracts with, or supports, and would need to keep student data privacy and accessibility guidelines for these tools in mind. It should also be noted that video conferencing platforms regularly add new features, and even slight changes to functionality can lead to significant affordances in pedagogical practice. Examples include self-selection for breakout rooms (Zoom 5.3.0), sharing instructor screen directly into active breakout rooms (Zoom 5.7.0), and integrated apps directly launching in the meeting platform (Teams first, Zoom 5.7.3).

## 9 Conclusion

This chapter describes a task-based model for the design and implementation of oral tasks that is designed to help language instructors scaffold instruction by capitalizing on the strengths of both synchronous and asynchronous modes. Synchronous sessions continue to be an essential part of language teaching and learning, and using a model such as ours can help practitioners continue to center their instruction around synchronous interactions without relying solely on what is afforded by the synchronous mode. By properly sequencing synchronous and asynchronous modes, language instructors can effectively and seamlessly increase students' time on task, use synchronous class time more efficiently, sustain interest by adding variety and continuity, and scaffold students' language use and development.

While many instructors are seeking ways to increase and improve the interpersonal tasks in their courses, few are at liberty to make sweeping curricular changes. Thus, the authors suggest a gradual introduction of this model, as certainly not every synchronous session needs to be structured the way this model suggests. Further, the breakout room tasks featured in this model require a certain level of willingness to sustain communication in the target language, digital literacy, and agency from the students—traits and skills that may first need to be cultivated. Instructors might add one or two integrated task series per semester, scaffolding development by starting with simpler tasks and then increasing complexity, staying mindful of how students respond. With careful piloting, instructor reflection, and feedback from students, practitioners can realistically integrate these task series and perfect them over several semesters.

While the design of the model is informed by empirical research, thorough integration of the model has not yet been implemented or empirically tested. At this point, the impetus for and content of the model comes from the authors' experiences as instructors and curriculum developers, as well as from feedback from both novice and experienced practitioners reflecting on their experiences as online language instructors. The model has been applied to individual task series but has not yet informed course design. The selection of tasks has been based on instructors' professional experience, curriculum fit, and perception of students' needs, rather than a carefully designed needs analysis, and a principled sequencing and grading of core tasks.<sup>1</sup> Therefore, what a course based on this task-based model would look like is still an open question. We invite practitioners and researchers to investigate the role of this and similar task-based models in online language pedagogy. In the end, it is how teachers implement these models and what students do with tasks that fuels language learning. As the model allows for a lot of flexibility and may be adapted to teacher preferences, comparing how different 'focus on form' approaches are adopted by instructors and received by students in different contexts might be the focus of further research. More generally, comparing task-supported versions of the model to task-based versions might provide insights in what works best for whom and may contribute both to the development of TBLT as a researched pedagogy (Samuda et al., 2018) and to the development and use of technology-mediated tasks in language teaching.

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<sup>1</sup>As neither Robinson's nor Skehan's theory of task complexity and sequencing (i.e., Skehan's Limited Attention Capacity Hypothesis (Skehan, 2015, 2018) and Robinson's Cognition Hypothesis (Robinson, 2011) and SSARC (Simple, Stable, Automatization, Restructuring) model (Robinson, 2015)—the two most comprehensive cognitive theories about how to sequence pedagogic tasks—have been empirically validated to the extent that they can be used for principled syllabus design, the onus on sequencing and grading tasks is still on the instructor (see Long, 2015; Ellis, 2017).

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# Transition to Online Assessment: Opportunities and Challenges for Language Lecturers in the EFL Tertiary Context



Ferit Kılıçkaya

**Abstract** Online assessment practices have been affected by various factors ranging from teachers' technological competence to devices and tools offered and made available both to teachers and students. The current study aimed at exploring challenges and issues experienced by language lecturers in Turkish tertiary contexts during their transition to online/distance learning and teaching. The participants of the study included seventy-five language lecturers at the School of Foreign Languages and the Department of Foreign Language Education at various state universities in Turkey. The study used quantitative data provided by the participants' responses to the online survey which included several short-answer questions regarding how they assessed students during the pandemic. The survey was created through Google Forms and shared with the participants via emails and social networking sites. The major results of the study indicated that a great majority of the participants did not have any power in the selection of the assessment types as the university senates determined the main assessment to be assignments or projects. The results also showed that academic integrity and grading were other concerns during the online assessment, in addition to technical problems, limitations, and devices available to lecturers and students.

**Keywords** English as a foreign language · Online · Assessment · Testing · Challenges · Opportunities

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## 1 Introduction

Much has been discussed about the importance of assessment and also the influence of technology in enhancing learning and teaching practices (Ferdig et al., 2020; Ferdig & Pytash, 2021; Garg et al., 2021; Hadjipieris et al., 2020; Harju-Luukkainen et al., 2020). Increased use of the internet, high-speed connections, and recent developments in technology have paved the way for several changes in both teachers' and students' lives in several ways. It is due to note the historical turn after the Covid-19, which enforced the use of technology. Before the pandemic, technological competence and availability seemed to be a matter of preference, but technological competence and availability are a must today. The main concern today is to determine how to utilize technological tools and websites including the audio and visual materials available, rather than whether to use these resources (Krajka, 2021; Stickler et al., 2020). Since the onset of the COVID-19 pandemic, quite a few teaching and learning practices have been conducted online and remotely either in a synchronous or asynchronous mode, and a variety of tools, and websites have been put into use by teachers and students (Krajka, 2021; Mann, 2021; Stanly, 2019). These include but are not limited to the emergence of new pieces of software enabling delivering tests online, personalized learning applications, and automated assessment of student essays. However, technology has failed to live up to our expectations. This might be attributed to the fact that we tend to focus too much on technology at the cost of learning design, and schools and faculty members might be unprepared for how technology can be integrated.

Assessment is an indispensable part of learning and teaching practices, and language learning is not an exception to this, as language educators need to use a variety of assessment instruments to reach various decisions regarding learners' or candidates' performance. This might involve decisions about learners' performance in the language classroom, such as determining learners' weaknesses and strengths, while in society assessment might serve accountability (Purpura, 2016).

Simply said, assessment is a collection of processes of gathering data on students' knowledge and performance related to their educational experiences. Formative and summative assessment are the two most common methods of evaluation (Lewkowicz & Leung, 2021; Russell & Murphy-Judy, 2021). Formative assessments occur inside an online course or lesson and are used to gauge how effectively a student is understanding the topic. They are continual, and constant, and give crucial feedback to learners. William (2018) underscores the main function of formative assessment as follows:

They can validate how well training or course content supports the course's overall learning goals. The effective use of formative assessment would increase achievement by between 0.4 and 0.7 standard deviations, which would be equivalent to a 50 to 70 percent increase in the rate of student learning (p. 38).

Summative evaluations, often known as final exams, examine what a student has learnt after finishing a course (Brown & Abeywickrama, 2018; Lewkowicz & Leung, 2021). Assessment information gives feedback to teachers and students in

the classroom to help them learn and teach better. Teachers can utilize the information acquired to both inform learning (formative assessment) and make a judgment on learning at a certain moment in time (summative assessment) (Absolum et al., 2009).

Especially during the pandemic shift to online assessment, many stakeholders believed that teachers could move the face-to-face assessment practices to online platforms and/or contexts and benefit from technology-mediated practices. These great expectations turned into monumental challenges and opportunities, especially in assessment practices. As a result of this sudden shift, most universities have also determined and forced all the lecturers and students to use the same or choose among the given options of assessment, in most cases without providing enough training or technical resources, which resulted in forced online assessment without considering the aims and nature of the courses offered (García-Peñalvo et al., 2021; Moser et al., 2021).

## 2 Literature Review

Learners can be provided with resources in and outside the classroom by using the available tools and websites on the Internet (Gimeno-Sanz et al., 2014; Lomicka & Lord, 2019; Son, 2017, 2020). For example, learners' listening comprehension can also be assessed through websites such as Edpuzzle (<https://edpuzzle.com>), a website where videos can be turned into assessment instruments including multiple-choice and open-ended questions. In addition to videos on various types of content, language structures and functions can be practiced and reviewed through game-like activities using websites such as Kahoot! (<https://kahoot.com>) and Educaplay (<https://www.educaplay.com>). In addition to these structures and functions, lexical items based on videos, listening materials, and coursebooks used can be practiced through online flashcards. Flippity (<https://www.flippity.net>) is a website that can create online flashcards based on Google spreadsheets. A variety of review/assessment activities can be created, such as virtual board games and click-and-drag objects. Coursebooks used in the face-to-face classroom before the pandemic can also be utilized in online classrooms by turning activities into interactive tasks for learners to do in a variety of exercise types, such as matching and multiple-choice questions. As indicated by Özer (2022), the teachers who used printed worksheets to review vocabulary and grammar topics before the pandemic started to use digital platforms such as Wordwall to turn these worksheets into interactive and game-like activities for assessment.

The research conducted on using online assessment recognizes various advantages of utilizing online assessment or e-assessment in the classroom. For example, the study conducted by Rolim and Isaias (2019) investigated the views of teachers and students regarding online assessment in Portugal and found that online assessment was highly valued by the participants, underscoring its advantages such as the easy track of learner process and fast assessment practices though with some



reservations such as the increased amount of teacher work. Kılıçkaya (2017a), for example, investigated the views of ELF teachers on the use of GradeCam Go!, a tool to score students' answers to multiple-choice questions in the face-to-face classroom. The results of the study also indicate that this tool was found to be useful in various aspects, such as immediate feedback and determining learners' progress.

As for the changes introduced into the existing language tests, Wagner and Krylova (2021) investigated how an oral communication test was moved online at Temple University. Rather than moving the test online, the administration created a new test, which would be conducted in an online context. Therefore, the test was delivered through an online meeting software, Zoom, which enables participants to converse online. Among many others, the feature of the new test which enabled test-takers virtually with a human being seemed to enable assessing authentic conversation competences as opposed to the previous test which asked test-takers to record their voices as a response to a question or a prompt.

Similarly, Green and Lung (2021) discussed how an English placement test was changed so that it could also be conducted in an online context at the test takers' homes. The small liberal arts university moved the test items online using the quiz feature of Canvas, and the exam security was ensured using a lockdown browser, sound, and camera monitoring on test takers' computers. It was also indicated that during the test, the exam proctoring system, Proctoria application, was used to check the test takers' rooms. The challenges included test takers' irregular Internet connections leading to technical problems which might question the results of the tests. The other challenges were related to the environment where the test-takers answered the questions, such as noise coming from other resources.

Ockey et al. (2021) indicated that Iowa State University decided to hold the placement test of oral communication face-to-face with strict limitations regarding health safety measures. This face-to-face decision was due to several limitations, but mainly security issues regarding determining the test taker's identity and the limitations of technology. Zhang et al. (2021) investigated Chinese EFL teachers' practices in online assessment practices during the COVID-19 pandemic and collected data through semi-structured retrospective interviews. The results indicated that teachers introduced several changes to their assessment practices, such as changing group work into individual activities, reducing formative assessment practices, and including more written assignments as alternative assessments due to concerns regarding cheating.

Mahapatra (2021) explored online formative assessment and feedback practices of three ESLT teachers that work in tertiary education in Nepal, Bangladesh, and India via conducting classroom observations, in addition to interviews and document analysis. Pertaining to the research question investigating how these three ESL teachers held their online classes during the COVID-19 pandemic, it was found that the selection and the use of assessment tools for formative assessment were determined by the teachers' knowledge, and the affordability and the Internet availability to the teachers, leading to the adoption of free digital tools such as Google Docs and Forms over the paid and more advanced tools.

Comparing traditional exams with alternative assessments (Gordon, 2020), several researchers indicated major advantages of alternative assessments, such as take-home written tasks. For example, Harper et al. (2020) indicated that exams are more prone to cheating than take-home written tasks, and other tasks such as reflections lead to a decrease in cheating (Bretag et al., 2019). However, despite various precautions to be taken, no exam/assignment can be a secure form of assessment, whether they are conducted online with time limits or randomized questions or they are given as assignments.

Considering all these findings and discussions, it can be argued that technology has paved the way for assessing language online in a variety of ways via several websites and tools available for improving language learning and teaching and has become an indispensable part of teachers' and learners' lives. However, it seems that there is further research needed on the issues and opportunities of online assessment since there is little research conducted up to this day on online assessment in tertiary contexts, especially issues and opportunities, and this remains an insufficiently examined field, which requires further investigation.

### **3 Research Questions**

The purpose of the study was to explore the challenges and opportunities faced by language lecturers in the tertiary context due to the rapid shift to online assessment practices. Based on the issues and challenges indicated in the relevant literature review in the tertiary context the following research questions guiding this investigation of online assessment are stated as follows:

1. How did language lecturers assess their students online at the tertiary level?
2. What were the opportunities faced during the online assessment at the tertiary level?
3. What were the challenges faced during the online assessment at the tertiary level?

## **4 Methodology**

### ***4.1 Research Design***

The study benefited from qualitative data through online surveys through which the participants responded to several short-answer questions regarding how they assessed their students in the courses offered during the pandemic and the opportunities and challenges faced during this process. The survey was created through Google Forms and shared with the participants through emails and social networking sites such as Facebook at the end of the Spring Semester in June 2021, and the responses were collected for 3 weeks.

## ***4.2 Research Context and Participants***

English is taught and learnt as a foreign language in classrooms at educational institutions ranging from primary schools to universities in Turkey. In addition to English, several other language courses such as German, French, Chinese and Japanese are also introduced at high schools as well as universities, and language planning and policy implementations were conducted on minority languages and foreign language education to promote multilingualism (Ünal Gezer & Dixon, 2021). Before pandemic, online instruction was an option for language instructors who were willing to take some of the courses online through Learning Management Systems (LMS) and activities on several platforms such as Nearpod and Wordwall (Akayoğlu, 2021; Özer, 2022). Most of these courses were conducted asynchronously, leading the students to complete the assigned work self-paced.

The study included seventy-five language lecturers working at the school of foreign languages, and foreign language education departments of fifteen state universities in Turkey. responded to the short-answer questions regarding their online assessment practices. Of these participants, 45 were female and 30 were male. Their ages ranged from 27 to 48, and their average teaching experience was 10.3 years.

## ***4.3 Data Collection and Procedure***

The data of the study included the responses of seventy-five participants to the online survey, with brief answers. The participants were first provided with basic information about the study and the aims and then were asked to confirm their consent on Google Forms to continue providing responses. The survey included six basic questions about the participants' experience with online assessment in their institutions:

1. Have you used any form of online assessment in your courses? If yes, in which courses? If the online assessment has not been possible, could you please share the reason for this?
2. Have you decided on the assessment form by yourself or has it been mandated by your institution?
3. What has/have been the main reason(s) for your/ your institution's decision regarding the assessment form?
4. What tools/websites have you used or have been provided by your institution to conduct the online assessment?
5. Are there any advantages/opportunities of your/your institution's online assessment practices? Could you please explain briefly? and
6. Are there any disadvantages/challenges of your/your institution's online assessment practices? Could you please explain briefly?

## 5 Data Analysis

The data analysis included the content analysis of the participants’ responses. The responses provided to the questions of the survey were subject to thematic analysis (Braun & Clarke, 2006), which is a qualitative data analysis requiring the careful reading of data collected via interviews or open-ended questions. In this analysis, the patterns and themes are identified and investigated in the qualitative data. Google Forms were used as the data collection platform as the responses were automatically recorded in the database for content analysis. Based on the semantic content, the responses were checked for emerging themes and codes. The initial analysis was completed by the researcher himself; however, an expert in qualitative data collection and analysis checked the responses, the themes, and the codes.

## 6 Results

The themes and the codes that emerged as a result of the content analysis are presented in Tables 1, 2, and 3, which also include several representative quotes to exemplify participants’ responses to the open-ended questions. In Table 1, the results are provided as to the first research question: How did language lecturers assess their students online at the tertiary level?

**Table 1** The themes and codes that emerged from the responses regarding the assessment formats

Theme	Code	Sample response
<i>Assessment formats</i>	Asynchronous exams	<i>I created several online quizzes for my learners for almost each unit so that they can be ready for the topics that we will discuss. I have also used them as part of their midterm scores. They were required to answer the questions within a few days before the online class started.</i>
	Synchronous exams	<i>As I had many students and offered several courses, I decided to use Multiple-choice questions as synchronous exams. These exams had to be given on a specific day and within a limited amount of time. But they saved me a lot of time.</i>
	Assignments (take-home)	<i>As my university required all the lecturers to use assignments or projects for the midterms and finals, I prepared several tasks which would require the students to do some research on the topic and synthesize what they obtained. I tried to ask questions or creates tasks that would not lead them to copy and paste the information from the internet.</i>
	Tools/websites	<i>My university used Moodle to provide the content and to conduct online exams as well as using assignments. The exam or quiz function of this platform enables us to create quizzes with traditional item formats such as multiple choice and fill in the blanks. Using the assignment function, the students could upload their assignments in word processing or pdf formats.</i>

**Table 2** The themes and codes that emerged from the responses regarding the opportunities of online assessment

Theme	Code	Sample response
Opportunities of online assessment	Instant feedback	When I used selected response items such as multiple-choice questions, my students immediately were informed of the correct answers. They did not need to wait for several days.
	Easy scoring	Our university was using the Moodle platform as a learning management system and the scoring was automatically done by the quiz function of this platform. The results were prepared just in seconds.
	Flexibility	I think one of the main advantages of online assessment is that students could take the test without being limited to any place or time. They could submit their assignments until the deadline using the internet.

**Table 3** The themes and codes that emerged from the responses regarding the challenges of online assessment

Theme	Code	Sample response
Challenges of online assessment	Technical issues	During the synchronous exams, several students lost their Internet connections, or they had some other problems. That was the substantial challenge that I needed to face during this type of exams. However, we did not have these problems as there were certain time available to submit the assignments.
	Academic integrity	As there were no precautions regarding the security of the exams such as online proctoring and lockdown browser, it was not possible to determine whether the answers were provided by the students themselves. This is also valid for the assignments. Somebody else could do the assignments.
	Grading assignments	It was difficult for me to grade all those essays. There were around 75 students in my class, and spent several days to grade every paper. I believe this is the great challenge when you have to read all those papers on the screen.
	Limitations	Assessing the speaking skill is a really challenging task during online assessment. As there were many students in my class, it was not possible to practice speaking. In my classes, I asked them to record their presentations using their mobile or desktop computers but often I noticed that they were just reading the notes that were written.

The theme ‘assessment formats’ includes four codes: asynchronous exams, assignments (take-home), synchronous exams, and tools/websites. Many of the participants ( $n = 55$ ) indicated that they benefited from asynchronous exams, which were conducted through online channels without real-time interaction. As responses also indicated, these exams were used for low-stakes testing. These exams were also used as ‘synchronous exams’, which learners had to take online at a specific time and day, together with the other students. In addition to the asynchronous and synchronous exams, most of the participants ( $n = 60$ ) stated that due to the university

regulations and senate decisions, for the final and/or retake exams and/or high-stakes testing, they had to assess their students through assignments or projects in the form of take-home assignments. In this specific research context, while final and retake exams were considered as high-stakes testing since these exams had a crucial role in passing or failing the class, low-stake exams included mini-quizzes or mini-tasks which contributed to the final grades, but to a limited extent.

In Table 2, the results are provided as to the second research question: What were the opportunities faced during an online assessment at the tertiary level? The theme, 'opportunities of online assessment' includes three codes: instant feedback, easy scoring, and flexibility. As for the opportunities, the great majority of the participants (n = 65) pointed out that through asynchronous exams and synchronous exams, which included multiple-choice and short-answer questions, the lecturers could complete the scoring easily, and the students could get immediate feedback regarding their answers, together with correct and incorrect answers. One participant expressed this as follows:

*When you have many students, I believe that you can use quality multiple-choice questions in the online exams to assess your students' ability appropriately and adequately. In addition to this, you can get the immediate results, and get these results to your students immediately [Participant ID5].*

In line with this opportunity, the participants also stated that through learning management systems (LMS) such as the Moodle platform, the results of the exam were provided instantly without any manual calculation or grading process. Another useful characteristic of online assessment, as stated by the participants, was related to the flexible nature of assessment in terms of time and place. In other words, via online assessment tools available, it was possible for both teachers and learners to conduct and take the tests regardless of the place and time, except for the synchronous exams. One participant pointed out this by saying:

*I think the great advantage of online assessment is its flexible nature. I mean, you do not have to be in a specific location, and sometimes you can take the test whenever you want. You can also submit your assignments online. This is the main benefit [Participant ID6].*

In Table 3, the results are provided as to the third research question: What were the challenges faced during an online assessment at the tertiary level? The theme, 'challenges of online assessment' included four codes: technical issues, academic integrity, grading assignments, and limitations. One major concern of the participants regarding synchronous exams was the technical issues or problems experienced. Almost all the participants (n = 70) expressed that losing the Internet connections or experiencing other problems such as computer breakdown was the major issues for the students during online exams. However, they added that this was not a problem for the asynchronous and take-home exams, as the students were provided with some time to carry out the tasks. One participant stated that,

*Conducting synchronous exams on a specific day and within a limited time was a risk-taking action for many lecturers and students alike. This was because when a technical problem occurred; it was necessary to take the test again. This meant several problems for the students as well as the lecturers [Participant ID67].*

Academic integrity was another challenge of online assessment since many participants ( $n = 64$ ) expressed that as there were no precautions taken against cheating during the online exams and it was not possible to determine the authorship of the assignments and projects submitted. Regarding this, one participant expressed that:

*It is not possible to avoid cheating or prevent students from getting others to do the work. This is a genuine concern if there are no precautions taken about the security of the exam. It was really difficult to know who was the actual author of the assignment submitted [Participant ID7].*

Grading exams was another issue indicated by most of the participants ( $n = 60$ ). It was stated that as some universities required final exams to be conducted as the assignments and/or projects, and many classes were overcrowded, the participants had difficulty in meeting the deadlines in terms of submission of grades as well as providing appropriate and necessary feedback to the students. One of the participants expressed this as follows:

*We did not have the choice to select the assessment format at our university. It was communicated to us that the final and retake exams would be assigned as the assignments. I was teaching over one hundred students in several classes, and it was really a significant challenge to read and score all those pages on the computer screen [Participant ID25].*

Related to grading essays and projects, several participants ( $n = 23$ ) expressed that in addition to the hours spent in front of the screen before and during online teaching, reading and grading assignments and projects caused eye fatigue, reading efficiency, and speed. The fourth challenge that occurred in the participants' responses was related to the limitations regarding assessing skills online, such as speaking. Although several participants ( $n = 24$ ) indicated that their institutions enabled them to use Zoom and other online platforms to assess productive skills, it was not possible to do so due to the number of students, the technological devices available, and some other connection issues. One participant stated that:

*Speaking and writing activities were a little problematic during online assessment as it was not possible to allocate enough time for each student to speak or write, not to mention the technical problems that occurred such as loss of Internet connection and the background microphone noise [Participant ID42].*

## 7 Discussion

The responses indicated that pertaining to language assessment, the participants had two options: (1) Online exams through recognition-based questions such as multiple-choice questions, or (2) Assignments (sometimes also known as take-home exams). Many university language lecturers are mandated to assess student learning at the end of the semester, which is also known as a summative assessment. This form of assessment mostly consists of an in-class examination in which students sit for the test, a project, or a take-home examination in which students react to various questions that incorporate scenarios and integrate several topics. However, owing to



recent events, lockdowns, and a rapid shift from in-class examinations to online assessment, professors have been required to assess students using other assessment approaches and activities. While some teachers were given the option of using the most appropriate tool for their courses, classrooms, and skills practiced, others were forced to administer online examinations in the form of short-answer or multiple-choice questions. The results of the study indicated that the majority of participants had no involvement in the assessment types since the assessment type (one high-stakes test) was predetermined by university senates. Regarding online assessments in the form of quizzes, many participants expressed that synchronous and asynchronous exams in the multiple-choice or short-answers formats had certain merits such as frequent testing, easy track of learner progress, and preparing students for the next classes, which is in line with the findings of other studies (Kılıçkaya, 2017a, b; Rolim & Isaias, 2019).

The overall picture shows that the participants utilized a variety of quiz tools (Aydoğan Yenmez & Gökçe, 2021; Buczek-Zawiła, 2021) such as the quiz function of Moodle and Kahoot!. Using LMS's assessment tools or applications allows lecturers to use online assessments, especially when recognition questions in the form of multiple-choice questions are used as they are easier to mark and report the results (Aziz & McKenzie, 2020). However, online assessment was inevitably influenced by what technological tools were provided to the participants by their institutions.

Accordingly, the online assessment practices were limited to what was offered by the institutions and what digital features were provided (Freddi, 2021). Even though several participants tried to benefit from other tools and websites, they later decided not to do as they needed advanced features that required upgrading, which was not affordable to some extent. The (un)availability of technological tools and devices, institutional support, and training programs could affect the participants' resilience (Bihu, 2021; Carvalhaes et al., 2020). In other words, when the participants were faced with adversity or stress, their ability to adapt could be lessened.

The findings of the current study might prove beneficial for language lecturers and various stakeholders, including learners and administrators, regarding the challenges and opportunities of assessing language online both during and after the pandemic. The data indicate that language lectures who assessed students prior to the pandemic through exams and quizzes that included selected response items continued to do so online using the resources provided by their universities; however, they were also asked to consider academic integrity while assessing their students, such as cheating (getting help from others, sharing answers, etc.), and contract cheating (getting somebody else to do the exam).

In several cases, the participants were asked to replat with either continuous assessment with various forms of assessment such as mini-quizzes and low-stakes assignments or with take-home assignments to be submitted in the next ten or fifteen days. Many participants did not have the chance to minimize the weight of the final examination. Therefore, in some institutions, decisions were left to the lecturers, who were asked to consider facing technological problems students might have while taking exams online on a specific day and time. As indicated by the

participants, most of the assessments in the university courses were offered as two exams: (1) the midterm, and (2) the final exams. Despite some minor variations, the midterms were conducted towards the end of the seventh week of the semester, while the final exams were to be taken after the 14th week. These were mandatory assessments required by the universities where the participants worked and they needed to be conducted as evidence of assessment to determine whether the learners met the requirements of the courses.

The assignments were also mainly done asynchronously in the format of assignments (take-home) to be submitted in a given time to avoid technological problems such as loss of Internet connection or unexpected computer breakdown. Harper et al. (2020) showed that synchronous exams are more prone to cheating than take-home written tasks, and tasks such as reflections and personalized tasks lead to a decrease in cheating (Bretag et al., 2019). However, participants in the current study stated that take-home examinations were extremely difficult in terms of marking and academic integrity, as lecturers were required to assess hundreds of student papers and examine these papers for similarity using multiple websites.

It may be claimed that both methods of evaluation have advantages and disadvantages. Online tests, for example, are administered using web-based apps and have stringent time constraints. Depending on the capabilities of the tools used, questions might be randomized for each student. Take-home tests in the form of assignments, on the other hand, are unsupervised, and students can use their course-books, lecture notes, and other resources to complete them. However, academic integrity, authorship, screen reading, and test security appear to be the issues faced in both assessment methods (Green & Lung, 2021), which was also indicated by Çetin and Kılıçkaya (2019), and Bearman et al. (2020). The major challenges included technical problems such as the Internet connection and the exam environment issues such as the noise in the learner's room (Green & Lung, 2021).

Although formative assessment is valued in online contexts (Goertler & Gacs, 2018) and the participants underscored the importance of formative assessment to inform both themselves and their learners about their progress showing strengths and weaknesses, in most cases it was not possible to achieve this due to the number of students, and the irregular Internet connection, which might cause disadvantages for some learners. As indicated by the survey participants, due to the requirement for reliable Internet connection and the fewer technological problems, asynchronous exams, mainly assignments, were given priority over synchronous exam methods, which is in line with the findings of the other recent studies (Muhammad & Ockey, 2021; Rahim, 2020; Zhang et al., 2021). Therefore, as indicated by Jin et al. (2021), having a reliable internet connection and access to necessary equipment appears to be the most crucial factor in ensuring online teaching and assessment practices, which is also consistent with the findings of other studies (Huber & Helm, 2020; Jiao & Lissitz, 2020; Mahapatra, 2021). When these exams were conducted as synchronously as online live tests on a specific day and time, they were not controlled using security precautions such as lockdown browser and remote or onsite proctoring. The responses also reveal that although the participants wished to use remote proctoring services during the exams, most institutions requested them to

find ways and strategies that would enable exams to mitigate cheating. Since academic integrity appeared to be a significant concern for the participants, they tried to conduct exams whose questions prioritized thinking rather than selecting the right or wrong answers.

In terms of limitations, participants were unable to assess specific course objectives such as fluency and pronunciation in speaking classes, and multiple low-stakes exams in the form of quizzes or assignments were not possible due to a variety of factors including university regulations, student numbers, and technical resources available to students. The attendees also expressed their worries about student involvement and equitable promotion. Another participant's concern related to the reliability of scores obtained on the online assessment was the learners' experience with these tools and their typing speed on electronic devices. As indicated by Zhi and Huang (2021), the test-takers whose typing skills are superior to others might achieve success over others on activities or responses which require typing proficiency. In other words, open-ended questions where learners are required to type their responses in the online text boxes or take-home word processing documents will place more onus on learners (Apps et al., 2020).

## 8 Conclusion and Implications

Assessment is an indispensable part of any teaching and learning context, and language learning practices are not an exception to this. Assessment practices have been crucial in tertiary education, as in many other contexts, and this has received further attention in online contexts, especially during the COVID-19 pandemic. The current study aimed at exploring how language lecturers assess their students online at the tertiary level, and the challenges and opportunities faced during online assessment at the time of the COVID-19 pandemic. The results mainly showed that the use of online assessment and the format of the assessment were determined by several factors such as the policy and the decision of the university senates, the tools and websites provided to the lecturers and students, and the technical resources including the Internet connection and speed. The results also indicated that although there are certain advantages of online exams, including recognition-based questions such as multiple-choice items, assignments and projects were found to be challenging in terms of scoring and providing feedback. About the ethical issues, the participants also raised concerns about academic integrity, which is related to the students' unethical behavior in their academic work especially when completing assignments and projects.

One implication of this study is that university staff also needs more training for digital competences (Cengiz et al., 2017; Rakıcıoğlu-Söylemez & Akayoğlu, 2015), and teacher education programs should consider providing training on infusing digital technologies into assessment into their classroom by normalization (Bax, 2011) so that these skills and information practiced in these training should also be modeled by their pre-service language teachers (Akayoğlu, 2021; Bates, 2019;

Krajka, 2012; Levi & Inbar-Lourie, 2020). This is very crucial since language educators do not have enough prior experience in terms of technical and practical aspects of assessing language online (Carnegie Mellon University, 2020). The training should cover topics and practical information to answer questions such as What “tech-tools” should I use to offer a final test or exam, remotely? How to ensure academic integrity during offering/taking the exam? and how should I grade the test/exam offered remotely? as part of their technological pedagogical content knowledge (Koehler & Mishra, 2009). The training might also provide practical workshops on academic integrity, e.g., increasing awareness on cheating and including cheating in academic integrity statement, being flexible with (late) submissions, focusing on the process for assignments and projects, submission of multiple drafts of assignments (proposal, interim drafts, and feedback), determining alternative assessment based on the course content and lectures in addition to mini-presentations on the assignment. It is suggested that the Higher Education Council or any other institution that is responsible for tertiary education should provide country-wide licenses for websites or tools which teachers can use for advanced features such as creating open-ended questions and securing browser actions.

In addition to these suggestions, it should be also considered how lecturers and students could cope with challenges and also opportunities regarding the lack of digital competence or may be more important, the unavailability of the tools, devices or necessary tools discussed and used in the training programs and/or the teacher training curriculum. Moreover, it is also necessary to discuss and deconstruct the myth that technological advances surely bring efficiency. Therefore, unavailability and efficiency could also be considered from a counter-perspective.

## 9 Further Research

Several suggestions for further research can be put forward as regards the findings of the current study. Considering that the study was conducted online with a limited number of participants at the tertiary level, it is due to note that the findings might be transferrable to similar contexts, although it might not be possible to generalize to a larger population. The study focused mainly on perceptions or the responses as provided by the participants. In other words, the study relied on the participants’ self-reported data, and the findings should be considered with caution, as the views might not accurately reflect the actual practices and perceptions of language lecturers, and the participants’ actual practices could not be investigated. Therefore, as a triangulation of the data, assessment papers or tests as used by the participants could be analyzed. Further research can also focus on the effects of sudden or unplanned decisions on the assessment types and formats, and how resilience can be maintained when faced with the unavailability of the necessary tools, and the lack of competence.

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# Designing for Equity: Enhancing Opportunities for Online English Language Instruction via Universal Design and Accessible Instruction



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**Abstract** Supporting English language instruction for all learners can be a complex task but is necessary to ensure that learners have equitable opportunities to learn, such as access to supports and resources so they can show what they know and can do. In this chapter, I review commonly used terminology and practices through an equity and accessibility lens, focusing on the needs of educators to support their students with specific learning difficulties. I highlight selected instances from the literature where conceptual and empirical studies have spotlighted the need for cohesive, concentrated efforts to improve access in English instruction and English educator training. I follow with key interdisciplinary frameworks and principles commonly used in education and digital information settings to introduce selected characteristics impacting equitable instructional access. I connect these interdisciplinary considerations to selected English language instruction examples, showcasing the criticality of accessibility for some learners and overall helpfulness for all learners to access online English language instruction. Finally, I conclude with areas in need of future research to further align policy, research, and practice.

**Keywords** Universal Design for Learning · Specific learning difficulties · Accessibility · Online English language instruction · Inclusion · Equity

## 1 Introduction

Advances in global awareness and attention to diverse populations have led to an increased need for educators to learn how to serve diverse students. Accelerated by the recent shift to online instruction and assessment to support students' learning during the COVID-19 pandemic; educators face an unprecedented imperative to

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move instruction online and still meet the needs of all learners. In this chapter, I discuss the need for equitable online instruction and make explicit that equitable online instruction is beneficial for all learners, including learners with specific learning difficulties.<sup>1</sup> The purpose of the chapter is to highlight key Universal Design for Learning (UDL) principles and technical web accessibility standards that have the potential to maximize opportunity and impact how English learners, including learners with specific learning difficulties, access and interact with digital English language instruction. These apply to all learners, regardless of age, or disability type, or international location. Most importantly, given the wide variation in English language curriculum or instructional methodologies (Richards & Rogers, 2001), these principles apply across curricular and instructional contexts as well (i.e., during all instruction and assessment, regardless of the language curriculum and target language goals, English as a second language, or English as a foreign language settings).

Establishing this principled foundation is critical, as instructors may have varying experiences with opportunities to learn a range of inclusive pedagogical practices and how to use them in the language classroom (Kormos & Nijakowska, 2017; Nijakowska, 2014). This chapter does not discuss issues of identification, assessment, or diagnosis for learners with specific learning difficulties. Nor is the purpose of the chapter to discuss or adapt English content for digital instruction, although some examples are provided for illustrational purposes only. Instead, I begin by highlighting findings from the literature and explaining two distinct, yet complementary interdisciplinary sets of principles (UDL, technical accessibility) that provide a conceptual foundation for online English language instruction to improve accessibility and equity for all language learners, including students with specific learning difficulties. Following this, I explicate specific methods unique to these perspectives to apply across a range of language methodologies and curriculums. These perspectives apply across multiple settings and contexts, including English as a Second Language and English as a Foreign Language. These perspectives even apply across multilingual environments where people use multiple languages in the community, as well as instructionally. Lastly, I highlight critical areas in need of additional research so that applications of these interdisciplinary methods can produce more accessible and equitable digitally delivered English language instruction.

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<sup>1</sup>For an overview of the meaning behind the “specific learning difficulties” phrase, refer to Kormos (2017). Given the variability in terminology for this group of learners which also includes students with disabilities who may advocate for more authentic identity-first (e.g., blind person) rather than person-first (person who is blind) terminology, I continue to use the phrase “specific learning difficulties,” in this chapter intending to represent all learners, including learners with disabilities. Where authors used different terminology, I will use their terminology for consistency.

## 1.1 *Accessibility, Equality, or Equity?*

Educators may use readily available content, materials, and pedagogical practices to help their students achieve their learning goals. But regardless of how appropriate these available content, materials, and pedagogical practices may seem, if these resources are not accessible, they have the potential to introduce unintended consequences and interfere with some language learners' opportunity to learn.

Often, the terms *access*, *accessible*, or *accessibility* are used to mean the availability of something, to make it easier to access something. For example, in education, these terms might describe the lesson plans and curriculum being available for all learners, e.g., for teaching, "the educators have *access* to range of lesson plans..." and learning, e.g., "in their English-medium classroom, the materials are fully *accessible* online..." or "... learners have *access* to a variety of written English materials...".

However, in this chapter, I use the terms *access*, *accessible*, or *accessibility* to refer to content designed to meet technical web accessibility guidelines. These guidelines help ensure that the content is not only available, but also consumable for all users, including learners with specific learning difficulties who may require use of specialized equipment or software (i.e., assistive technology) to gain access (WebAIM, 2021). An example of this is with learners who are blind and use assistive technology like screen readers, specialized software that reads screen content aloud, as their main means of access. Designing digital content without certain technical accessibility specifications from the onset will impact any other strategies to minimize barriers. In this example, attempts to increase access will not have the intended positive impact if the learner cannot gain initial access using their screen reader.

*Equality* is also a phrase that can describe attention toward fairness for all. Instead of equality, however, I use the term *equity* to refer to a social justice perspective of fairness for learners. For example, instead of teaching learners the same subject the same way, educators may notice learners' individual characteristics that might influence how they interpret and interact with the target content. Instead of relying on visual explanations or graphics for all explanations, an educator attempting to promote access and equity may use graphics and other techniques, like auditory and tactile resources, to promote access. I use the specific applications of these terms in the rest of the chapter.

### 1.1.1 **Why Does this Matter for Online English Instruction?**

Simply put, foundational efforts like UDL and technical web accessibility can minimize barriers for learners and produce accessible, equitable online English instruction. Ultimately, these targets can help guide educators' decision making by identifying opportunities in lesson goals, instructional content, and activities, and creating language learning checkpoints. With these accessibility targets influencing

some of the decision making around the lessons, instructors also retain the flexibility to further adapt their lessons for instructional or other purposes (e.g., racial equity, socio-cultural needs). Implementing technical web accessibility and UDL considerations are not intended to change or limit traditional English language instruction, but rather provide opportunities for all learners to gain access, rather than be excluded from English language instruction.

## 2 Literature on English Learners

From a more conceptual perspective, instructional and assessment opportunities should remain open to everyone. These opportunities must reach learners of all ages and abilities, including very young learners and those who have specific learning difficulties, including disabilities. Particularly for these latter groups, several factors have the potential to influence instruction. The following paragraphs highlight emerging research around these groups, illustrating the variability within the sample and underscoring the helpfulness and necessity of accessible and equitable language instruction.

Specific to young learners, it is important to ensure the instruction is fun, developmentally appropriate, and that educators are prepared to address pedagogical, behavioral, or motivational challenges that may arise (Copland et al., 2014; Garton & Copland, 2018). However, several factors, such as parental and socioeconomic factors (e.g., Butler, 2014; Huang et al., 2018), governmental or other political reforms (e.g., Butler, 2007, 2014, 2015) may even differentially impact young learners' education. Further, language instruction models may introduce differences in students' opportunities to learn and demonstrate their skills (Richards & Rogers, 2001; Echevarria et al., 2008). And in some contexts, teaching young learners English instead involves an assessment process, where a survey tool and screener are used to identify and assess students' language skills (e.g., as in the United States, Bailey & Kelly, 2013). These nuances have the potential to impact learners' educational journeys, thus requiring that instruction and assessments should be accessible, equitable, and developmentally appropriate (e.g., clear directions, age-appropriate timing, developmentally appropriate skills and feedback) so that learners have every opportunity to show what they know and can do (e.g., Garcia Bedolla & Rodriguez, 2011; Guzman-Orth et al., 2016; Wolf et al., 2020).

Similarly, research on English learners with specific learning difficulties, like the research on young learners, is still emerging. Conceptual approaches include developing a theory of action, chains of evidence-based reasoning to support English learners with the most significant cognitive disabilities in the United States with the goal of English language instruction and assessment supporting students with opportunities to learn and achieve educational and career goals commensurate with their peers (Gholson & Guzman-Orth, 2019), and interactions between the English

Language Proficiency (ELP) construct, skills, and learner needs to raise awareness of validity and fairness considerations for English learners with disabilities (Guzman-Orth et al., 2016). Challenging the application, however, is the reality that disabilities and strategies will change over time (Eikel-Pohen, 2019), requiring greater support from educators. However, English language educator training programs do not consistently include pedagogy and practices to support students with specific learning difficulties; warranting additional support for educators to address learners' cognitive and affective needs that may impact learners' instruction (Kormos, 2017; Kormos & Nijakowska, 2017; Nijakowska et al., 2018; Vogt, 2018).

## ***2.1 Looking Forward***

Connecting these critical points in practice to support language learning is imperative to providing equitable access for all learners. While previous research has focused on the cognitive considerations for language learning and identified connections to high incidence disabilities, like reading disabilities (i.e., Dyslexia; Kormos, 2020), I summarize and present considerations related to providing access for all learners. These considerations are applicable regardless of disability type, age level, or instructional program/English language curriculum. Following are some examples where application of these principled design approaches and accessibility guidelines can increase access to online English instruction.

## **3 Principles of Inclusive, Accessible Design**

In this section, I introduce guiding frameworks such as UDL and technical standards, such as Web Content Accessibility Guidelines (WC3, 2021c). I illustrate their utility in improving equitable instruction; however, one without the other may introduce accessibility challenges for certain learners. Even with ongoing application in the United States e.g., for young learners enrolled in pre-kindergarten through grade 12 (approximately ages 3 through 18), and adult learners (university age and beyond), the applications of these principles are still emerging in practice and application. As a result, they are a critical high priority to implement for equitable language instructional opportunities for all learners, including language learners with and without disabilities. For example, despite the benefits of UDL, there will always be a need to have specific, individualized solutions for certain learners. Accessibility guidelines and accommodations might better address specific student needs beyond UDL. I share these general frameworks to increase awareness of strategies to make instruction more accessible, but actual application of these approaches will always need to be tested and refined with educators and their students.

### 3.1 *Universal Design for Learning*

UDL (CAST, 2018) is a multi-pronged framework that is designed to optimize instruction and learning opportunities. Recognized internationally (Persson et al., 2015), UDL has a place in instruction to promote learning for *all* learners. UDL is for everyone; it is not simply a special approach to apply to learners with specific learning difficulties, disabilities, or other individualized needs. Educators who incorporate UDL principles in their instruction have the potential to make their content and instructional practices more relevant and consumable to a variety of learners (Rao, 2021). UDL principles are not prescriptive, and instructors may already use one or more principles naturally, to a certain extent, in their instructional design. Importantly however, UDL is not the same as learning styles, which have no scientific basis (Pashler et al., 2008; Willingham et al., 2015). Specifically, UDL has most often emphasized the need for multiple priorities in instruction, such as providing multiple means for:

- Engagement – Opportunities for students to connect to instruction with their personal interests (i.e., topical relevance, choice),
- Representation – Presenting information to students in multiple ways to provide opportunities for understanding the learning targets and what to do, and
- Action & Expression – Allowing students multiple opportunities to demonstrate their learning.

The UDL framework promotes these needs to reinforce learners who are purposeful and motivated, resourceful and knowledgeable, and strategic and goal oriented (CAST, 2018). At the time of this writing, newer iterations of UDL considerations inclusive of equity components are in development (e.g., Chardin & Novak, 2020). The field is revising the UDL framework, inclusive of the principles (engagement, representation, action & expression), guidelines (guidelines articulated across categories to provide guidance build into the principles so that users can differentiate between providing access, building supports, and providing mechanisms to help learners meaningfully internalize content), and checkpoints (which provide more detailed suggestions) so the framework incorporates considerations for equity (UDL Rising to Equity Initiative, CAST, 2020).

The following subsections will elaborate on the UDL framework to further consider when teaching, creating instructional materials, or selecting instructional or assessment practices to use in the classroom (CAST, 2018). For this chapter, I apply the principles to an example classroom lesson. The example will focus on building opportunity to develop learners' general academic language and discipline-specific academic language skills. Specifically, learners are required to collect data, and then create a graph using their data and explain their results to the class. With this general activity to build language skills, the following sections detailing the UDL principles showcase how educators can reflect on the UDL framework to purposefully enhance the general lesson goals for their learners.



### 3.1.1 UDL Principle: Provide Multiple Means of Engagement

Engagement refers to the act of motivating students to participate in the instruction and learning process. This means that the more students are interested or motivated in the instruction, they might be more likely to pay attention, participate, and retain information. Engaging students in learning and motivating them to actively participate in lessons is not always an easy task when there are multiple students with different preferences. However, the point is made that if learners are focusing on the material, they have the opportunity to actively retain and use the information in the future (refer to Guideline 7: Provide Options for Recruiting Interest, CAST, 2018).

Referring to the hypothetical class activity and academic language goals, educators should incorporate multiple strategies such as increasing students' time on task (i.e., how much time the learners actively spend on the activity compared to inattentive behaviors like discussing other topics) and building in opportunities for student choice to increase attention and engagement in the lesson. For example, if the language target is to use academic language around data presentation and visualization (e.g., graphs), perhaps students can select their topic of interest. Building in a chance for students to survey their preferred audience (e.g., their whole class) on their topic of interest can introduce opportunities to build and use social language. To address the variation in online instruction, students can conduct surveys with a variety of digital tools (e.g., email, social media, survey platforms). Further, reinforcing active learning is more than a single interaction in the online classroom. Sustained active learning and recall requires ongoing effort from learners, and some learners may require additional supports to do these tasks in a manner equitable to their peers (refer to Guideline 8: Provide Options for Sustaining Effort and Persistence, CAST, 2018).

Some of these supports might require that learners have choices at each stage of the activity to reflect learners' individual preferences. For example, some learners may know exactly what they like and how to apply it to the task. Other learners may need some scaffolding to help identify their preferences (e.g., asking children about their ideas on a topic and helping them to select one), along with an educator-supplied topic and audience in case learners cannot or do not feel comfortable selecting their own survey topic or audience. Lastly, self-regulation opportunities are an important part of the engagement principle so that learners take ownership at reflecting on and regulating their own internal and external reactions to the learning that is occurring (refer to Guideline 9: Provide Options for Self-Regulation, CAST, 2018). An example of a self-regulation checkpoint could include a checklist for specific language supports and reflection questions to gauge how the learners feel about the language use activity prior to starting, and again at the end of the activity, so learners can review any changes in their awareness and skill about using general and academic language (and even social language) through the learning activity.

### 3.1.2 UDL Principle: Provide Multiple Means of Representation

Three main guidelines also support the representation principle. This refers to building in multiple representations to present information in a variety of ways (i.e., multimodal) and building in options for individualized interaction with the content (refer to Guideline 1: Provide Options for Perception, CAST, 2018). For example, when learning how to build and describe their graphs, the educator may demonstrate using a variety of graphs including 2-dimensional graph drawings, 3-D representations, a graph of physical manipulatives (e.g., plastic cubes or other counters) or graphs made of realia (e.g., pieces of fruit, candy, stickers). Language and symbols are two components that need additional means of representation to support all learners. Remember, learners may have different proficiency levels in both English and their home language, and they may have different levels of familiarity with symbols or other semiotic referents, such as a division sign for learners from different countries of origin (Lopez et al., 2015; refer to Guideline 2: Provide Options for Language and Symbols, CAST, 2018). Educators can treat this variability as an opportunity to pre-teach, or to provide background knowledge before the main lesson. Rather than asking if students are familiar with the word or symbol (which may make some students feel uncomfortable in front of their peers), educators can include this information as a step in the lesson so that all learners have the information.

Lastly, instruction should be accessible to all learners. Since characteristics like mode, language, and symbols have the potential to impact learning, there is further opportunity to promote access for all learners, and that is by ensuring students have opportunities to access content regardless of their background knowledge and skill mastery. Educators should scaffold content to support all learners (refer to Guideline 3: Provide Options for Comprehension, CAST, 2018). One example of scaffolding the content could be a video or a worksheet that shows the options for graph creation, along with an option for a representation of the students' own choosing if it contains set parameters (e.g., X and Y axis, frequency counts), so that students do not have to rely on working memory or note-taking skills. Another form of scaffolding could be providing, or creating with students, a word wall with the social and academic language (words, phrases, sentence starters) that students will use to survey their classmates and describe their results.

### 3.1.3 UDL Principle: Provide Multiple Means of Action and Expression

Finally, providing multiple means of action and expression so learners can demonstrate their knowledge and mastery in a variety of ways is critical. This opportunity for individualization is necessary because of the range of learners and variety of skills and capabilities they possess. These skills could impact how they not only perceive the content but how they can respond to and use the content. Learners do not physically interact with print or digital materials in the same way due to motor, sensory, or cognitive characteristics, and options are necessary to promote access (Guideline 4: Provide Options for Physical Action, CAST, 2018).

For example, if learners need to create a graph and describe it, perhaps learners could create one using physical objects, draw one, or create one digitally. Instruction should be amenable to multiple types of demonstrations of student skills. Learners need a range of options to show what they know and can do (refer to Guideline 5: Provide Options for Expression and Communication, CAST, 2018). Following the same example of creating and describing a graph, students' options to describe their graph in English could include verbal, written, or typed descriptions. Depending on the instructional model, the home language might scaffold, or provide, targeted support. Lastly, considering executive functioning and working memory capabilities (e.g., cognitive load, Sweller, 1994) for instructional design is another way to optimize learning for diverse learners (refer to Guideline 6: Provide Options for Executive Functions, CAST, 2018). With our graph example, executive functioning supports could include a step-by-step checklist (i.e., task analysis, chunking) so that students can follow the steps to create their graphs. Alternatively, students can use this checklist at the end of the assignment, so that they can check their own work. Physical examples can support students create their graph, while other supports like sentence starters or sentence strips could function as another executive function support to help students with their descriptions or hold discussions with their peers (e.g., asking or responding to questions).

### ***3.2 Technical Web Accessibility***

Technical web accessibility, adherence to technical standards and guidance to make content accessible for learners with a variety of needs, can help optimize online English instruction. At the time of this writing, several countries have established specific policies, laws, and other guidance around access needs for persons with disabilities (W3C, 2021b). The World Wide Web Consortium (W3C) created an international working group to develop a set of technology standards, Web Content Accessibility Guidelines (WCAG; W3C, 2021c). WCAG guidance is temporal and successive. As innovations in technology and accessible digital solutions continue, WCAG guidelines continue to update. The guidelines are also organized into levels of conformance designed to build on one another (e.g., A [minimal], AA, AAA [maximal]). The guidelines are also intended to apply to all users, including those without disabilities. Rather than recommend that English language educators learn each of the WCAG success criterion, it may be more beneficial to think of accessibility through the POUR principles (W3C, 2021a). POUR refers to Perceivable, Operable, Understandable, and Robust. That is:

- Perceivable – Learners must be able to perceive all information on the interface in a manner that is accessible to them
- Operable – Learners must be able to interact with the information in a manner that is accessible to them

- Understandable – Learners must be able to understand the intended layout, content, and interactions present on the computer interface
- Robust – Learners must be able to interact with the digital content regardless of what type of access methodologies or assistive technologies are used.

In summary, these POUR principles work together to ensure that all learners have access to digital content using their preferred access methodologies. For example, learners without sensory, motor, or cognitive disabilities may prefer to use keyboard navigation at certain times as they interact with digital content. These keyboard interactions (e.g., control + C to copy and control + V to paste on a PC computer using a QWERTY keyboard) are an example of how WCAG guidance can benefit learners without the learners knowing they are benefitting from WCAG implementation.

Assuredly, technical implementation is a helpful skill but does not require that all English instructors become overnight experts, just knowledgeable users. Although it may be tempting to dismiss the relevance of technical accessibility requirements or to revert to status quo, it is important to note that doing so can introduce barriers for learners who solely rely on assistive technologies for access (not to mention the emerging global importance of web accessibility laws and policies, W3C, 2021b). The concentrated, ongoing international shift to intentionally remove barriers is necessary to be inclusive of persons with disabilities, promoting “equality of opportunities in education” and beyond, and establishing connection and relevance to the Sustainable Development Goals (SDGs 4, 8, 10, 11, and 16) (United Nations, 2021). For transparency, there is much more to the technological standards and implementation that is beyond this chapter. But by attending to these technical requirements when designing instruction or selecting online platforms, the instruction will be that much more usable by a wider audience, including learners with and without specific learning difficulties.

### 3.3 *Meeting Learners’ Needs*

Learners, with or without specific learning difficulties, represent a complex and diverse group of needs and preferences. Often, these needs and preferences have the potential to impact learners’ opportunity to learn, or opportunity *to have* learned. That is, *if* content was taught, whether the learner had the opportunity to have learn, master, and retain the content. In this sense, *barriers* may be a term used to describe elements that impact learners’ opportunity to learn. Identifying sources of potential barriers in instructional design is a critical step in optimizing language learning for learners.

There are multiple approaches to consider optimizing instructional design to meet learners’ needs. For example, although UDL has international recognition and is the lens I use to write this chapter, there are additional design frameworks used internationally that have similarities to UDL (Persson et al., 2015). While there are

distinctions in the descriptions of these frameworks, and differences in the applications (e.g., product design, architecture, etc.) ultimately the frameworks are all intended to promote greater access and equity. Similarly, experts in user experience and design thinking have also explored relationships between needs, products, and preferences that can help arrive at elegant designs to meet the needs of most users and are amenable to further adaptation (Holmes, 2020).

In the following section, I build on UDL and the WCAG POUR principles and introduce two commonly used schemas to characterize the range of learner needs. These characterizations, while not representative of all combinations, can elicit awareness of learners' needs, which may enhance English language instructional design.

### 3.3.1 Learner Needs Schematics

As mentioned earlier in the chapter, equal instruction is the act of providing all learners with the same instruction, using the same pedagogical methods. However, learners are different, and they represent a unique set of characteristics that may impact how they interact with the content (Ketterlin-Geller, 2008). In this section, I introduce two schemas to frame thinking around this complex topic. Some schemas represent learner needs. Examples of these include WebAIM characteristics, or Inclusive Design Toolkits (Microsoft, 2016; University of Cambridge, 2017). Other schemas represent the whole student, for example, intersectionality (Bešić, 2020). Intersectionality, originating with Crenshaw (1989) is a framework that addresses how power dynamics are magnified when multiple personal characteristics are considered, like the combined effect of language learning and disability, rather than language learning or disability only. In education, intersectionality is a framework to recognize the whole learner and the need for instructional design, interventions, and assessment to be responsive to intersectional learners rather than discrete characteristics.

### 3.3.2 Learner Needs

Understanding learners' needs beyond what they need to know from an English language instructional standpoint can be a complex endeavor. Some helpful examples of these approaches in the literature and practice are represented in the Microsoft Inclusive Design Toolkit. The Microsoft Inclusive Design Toolkit is a free resource (at the time of writing this) that introduces three key concepts. First, that needs emerge across all learners, not just those with disabilities. Secondly, needs have the potential to change. Lastly, when designed intentionally, elegant solutions can address a wide range of learner needs. For example, besides the range of learner needs for content instruction, learners also have personal needs that can be situational, temporary, or permanent (e.g., see the Microsoft Design Toolkit for an example of their approach to the User Needs Spectrum).

A situational condition is temporary and fleeting. A removal from the environment or stimulus can remove the constraints introduced by the situational condition. Examples of this can be a noisy room, direct sunlight shining on a computer screen, or inconsistent Wi-Fi because of the timing of the day and bandwidth issues.

A temporary condition is one that may not be as easy to remedy as a situational condition but is still time-bound. For example, temporary conditions may be something like a learner experiencing a sore wrist due to increased mousing needs associated with virtual learning, or a headache because of eyestrain on the computer.

Permanent conditions are those that cannot be remedied by removal of, or addition of something, like an accommodation or other assistive technology. Instead, permanent conditions are those characteristics, such as specific disabilities or health issues that are managed or accommodated and monitored by the learner. Examples of permanent conditions may be learners with sensory disabilities like blindness, low vision, deafness, or learners with health conditions like diabetes, that require constant monitoring of insulin levels.

Each of these time-bound conditions can introduce challenges for learners and how they experience English language instruction. Ranging from some minor inconveniences to more prevalent and profound impact, each can impact opportunity to learn. As a result, it is critical to intentionally design instruction to be as accessible to the widest range of learners as possible and ensure that it is also amenable to further accommodations to support learners. For examples of these situations and their potential impact on instruction, refer to Table 1.

## **4 Opportunities for Implementing Equitable and Accessible Instructional Design for Online English Instruction**

In recognition of these complexities briefly introduced in Table 1, learning how to incorporate accessible and equitable practices when teaching English is an ongoing process. The field is still emerging in its understanding of how to balance the complex needs of students with specific learning difficulties with language instruction and assessment. Further, the technological advances needed to implement accessible solutions are still evolving with technical web accessibility standards. As technological advances are made, the best practices or accessible solutions must be continually and carefully evaluated and updated to reflect changes in digital accessibility. The expected result should be iterative improvements to instructional practices as technology changes and more learners can gain access.

Furthermore, despite the advances in digital language learning opportunities and accessibility practices, there is a dearth of research focused on the interdisciplinary integration of the two respective fields, reflective of practice. Specifically, although international policies or guidance documents mention UDL and accessibility, the research on UDL and accessibility in language learning, teaching, and assessment is still an emerging field. Although this chapter aims to bridge these

**Table 1** Examples of learners' needs during instruction

Time-bound	Selected sensory experiences	Selected challenges for teaching and learning	Potential mitigations for teaching and learning
Situational	Poor lighting Glare on the computer screen	Limited visibility Limited reading of text or graphics on screen Distraction Lack of engagement	Check in with the learners e.g., "Let's make sure you can see your screen, let's try to problem solve" Help or allow time for the learner to move locations, adjust the computer, turn on a light, or close the blinds Allow time for individual or directive refocus (e.g., taking a break or refocus with a meditation or classroom mantra) Verbally describe everything on the screen
Temporary	Eye strain	Physical discomfort Distraction Lack of engagement Possible limit of visual access and demonstration of certain skills, e.g., Viewing text (e.g., reading) or graphics (decorative or construct relevant) in any domain	Provide frequent breaks Increase zoom on the computer screen or increase font size Check in with the learners e.g., "Let's make sure you can see your screen, lets problem solve" Help or allow time for the learner to look away and refocus, adjust lighting, change mode on the computer (e.g., high contrast dark mode) Verbally describe information Provide directions to use built-in read aloud devices (e.g., Microsoft Narrator) (note: built-in read aloud devices or text to speech will be dependent on the instruction being delivered and the device the learner is using)
Permanent	Blindness or other visual impairment	Construct definition and selected representation and action & expression challenges across language skills, e.g., Learning to read (read aloud, decoding) v. reading to learn (comprehension) and accommodations (e.g., braille or assistive technology)	Work with the learner (and the broader blind community) to provide preferred access strategies, and adapt specific language skill lessons Work with the learner (and the broader blind community) to ensure that learners are held to similar high expectations as their peers, and <i>if</i> lessons are adapted, unintended consequences (e.g., grading policies) are mitigated so that learners are not penalized



interdisciplinary practices to support the language learning needs for a range of learners, including those with specific learning difficulties, there remain several imperative topical areas for future research. These areas include: (1) educator preparation in areas of educational technology and English learners with specific learning difficulties; (2) English language instruction and accessibility for all learners; and (3) accessibility and accommodations for language teaching, learning, and assessment for learning.

#### ***4.1 Educator Preparation***

Following the discipline-specific academic language example raised earlier in the chapter, educator preparation is one key consideration that will impact when and how educators will implement UDL and accessibility guidelines in the classroom. UDL and accessibility are more than a checklist, a professional development workshop, or an educator preparation course. It reflects a fundamental shift in mindset to organically weave these principles through instruction and pedagogy. This, however, is facilitated by educators' opportunity to learn and use these strategies but is further complicated by changing modes of delivery (physical classroom, hybrid, or online). Ultimately, providing support for educator preparation and practice is critical to build on educator strengths in delivering accessible language instruction.

For example, there are variations in the rate of inclusion (i.e., the extent to which learners with disabilities are included in general education classrooms and school activities with supports rather than a separate setting for students with disabilities) and how it is implemented internationally, will impact educators' opportunity to learn and apply accessible instructional design strategies unless there is structured and systematic support. For example, inclusive classrooms (and thus expectations for inclusive educational and assessment experiences) may be more common across most school settings in the United States (Gholson & Guzman-Orth, 2019; Guzman-Orth et al., 2020), in other instances, inclusive language programs may be growing or associated with specific learners (Kormos, 2017). Recent efforts focused on delineating issues related to educator preparation in foreign language learning have been emerging (Nijakowska, 2019), but ongoing efforts to extend the work are still necessary.

Related to preparing educators to work with students with diverse needs, educators should also be skilled in ways to adapt or support content learning so that learners have access. For example, some educators have recommended focusing on oral communication or authentic language tasks (Kormos & Kontra, 2008; Kormos, 2017). Interestingly, these skills are often referred to as functional curriculum, and previous systematic review research has questionable evidence to support the use of functional curriculum (Bouck & Flanagan, 2010; Bouck & Satsangi, 2014). Alternatively, current recommendations are to promote high expectations and rigorous language curriculum based on evidence-based practices to support students reaching desired outcomes (Gholson & Guzman-Orth, 2019). More research is

needed to prioritize evidence-based pedagogical practices for educators to support students' skill acquisition across a range of interlocutors, settings, and for various purposes.

## ***4.2 Accessible English Language Instruction and Assessment for Learning***

Another challenge implied in the earlier discipline-specific academic language example is the lack of an existing off-the-shelf curriculum that is accessible for the full range of learners. Although in our earlier example, building a graph and using academic language to describe the graph was the learning target, building in opportunities for engagement and supports through the UDL principles were a natural extension that could support a wider range of learners. Through the application of the UDL principles, educators are encouraged to think through their students: who are these learners, what assets and resources do the learners bring with them into the classroom, and what are their interests? Through this exploratory preparation, it is possible that educators will discover common themes and interests, and areas of divergence. These similarities and differences can strategically help integrate UDL and accessibility through language instruction.

While previous research has explored the connections between language learning and cognitive disabilities (i.e., reading disability; dyslexia), there are other disabilities and learner needs that impact learners' opportunities to access English language instruction and assessment (Guzman-Orth et al., 2016). Assessment for learning is part of the learning experience (e.g., Bailey & Heritage, 2014; Lantolf, 2009). Providing learners with specific learning difficulties a consistent accessibility experience across their instructional and assessment experiences is important, and additional research is needed to identify evidence-based language teaching and assessment practices for learners with specific learning difficulties, particularly a range of sensory, motor, and cognitive difficulties. Considerations for the intersectionality across learners is important to include in these investigations as well (Bešić, 2020).

As the population characteristics diversify to include more learners, we must also reexamine traditional construct and task definitions. If the construct is defined, taught, and acquisition is measured thorough the traditional four skills of listening, speaking, reading, and writing, educators must also be prepared to include students in a range of interactions and opportunities for response. For example, if writing is taught in the classroom as forming words by hand before learners can type, learners who are blind and use other methods, like slate and stylus, braille, typing, or dictation, to name a few, will not be able to fairly demonstrate traditional handwriting as a precursor skill. In these instances, applying UDL and the POUR principles could help educators identify these problematic areas earlier in the instructional design to better include learners during the lesson delivery. Consequently, these conversations

and others are a critical necessity to ensure that all learners can access accessible English language instruction and show what they know and can do.

### ***4.3 Accessibility, Accommodations, and Assistive Technology for Online English Instruction***

With the previous two examples of educator preparation and thinking of the range of learners, acknowledging the accommodations some learners will need is equally important. Using our discipline-specific academic language example, understanding the range of learners is critical to ensuring the appropriate directions are in place for students so that their surveys, graph, and descriptions are accessible to their classmates. For example, if students wanted to use survey software or create a social media poll to survey their class, educators should provide their students with directions on how to create a text description of any images so that classmates with visual impairments can gain access.

Along with the shifting landscape for enhanced educator preparation and the need to discuss interactions between disability, accommodations, and traditional construct and tasks in English language instruction, is the need to conduct more research on the online interactions between instruction, delivery, and accessibility (e.g., accommodations, assistive technology). Accessibility considerations are beneficial for all learners, not only learners with learning difficulties. Educators can support these considerations through more traditional elements, such as creating clear and concise instructions in English (or even the home language, if used as part of the instructional program), and intuitive and consistent layouts so learners do not always have to search for directions, content, responses, or the navigation icons (e.g., “next” or “go back”). Again, these elements that are still emerging in digital design apply to all learners, all age levels, not only learners with learning difficulties.

However, despite the affordances offered by applying UDL to instructional design, it is imperative to ensure the resulting lessons are amenable to individualized accommodations for learners with specific difficulties, including disabilities. Accommodations are individualized supports that change how learners will interact with content or demonstrate their knowledge. Accommodations may vary across students or settings for various reasons (for an overview of recent shifts in accommodations for learners with specific learning difficulties taking ELP assessments, refer to Guzman-Orth et al., 2020). Nevertheless, understanding how accommodations can support online English language instruction is imperative and these are still areas where evidence is just emerging. The interaction between online English instruction and accommodations is critical to investigate and identify best practices for educators, so their teaching does not fall subject to the nuances of assistive technology. For example, options in assistive technologies, such as screen reader software, vary widely in use and preferences (WebAIM, 2021). These assistive technologies may have unintended consequences on the impact of the instructional

delivery, such as the variation in how screen readers announce and pronounce characters (Bowman, 2014; WebAIM, 2017) and whether the variation in pronunciation may impact how learners are learning English. Although this is just one example, more investigation is needed to determine when and where assistive technologies may introduce unforeseen complications in English instructional delivery. In these instances, the goal would be to determine how to adapt the language instruction while still maintaining high expectations, rather than change the task difficulty to make the instruction easier or limit learners' access to their preferred assistive technology.

## 5 Conclusion and Implications

Serving learners in online English language instruction has accelerated because of the global response to the pandemic, yet, guidance on how to produce equitable and accessible online English instruction for all language learners is only emerging. The perspectives and focus on UDL and technical web accessibility considerations in this chapter are intended to serve as a critical foundation to help educators support all learners. Irrespective of the learner, or if the learner has a disability, or instructional setting or language curriculum, English language instruction may benefit from concentrated attention to the affordances of UDL and accessibility POUR principles to address the needs of their learners in online environments and support learning and assessment. Including these practices and principles in instructional design may support educators by bridging international accessibility guidelines with online English language instructional practices to improve instructional design and increase access for all learners.

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**Part II**  
**Practices and Future Envisions**



# Flipped Teaching Through a Massive Open Online Course and a Debate Project for Learners of English at University: A Case Study



Ana Gimeno-Sanz

**Abstract** This chapter reports on a Flipped Teaching experience combining content delivery by means of a tailor-made Massive Open Online Language Course (LMOOC) and in-depth classroom tuition through a Debate project for learners of English for Specific Purposes (ESP). Surveys were administered at the outset and at the end of each of these two teaching methods, as well as a questionnaire enquiring about the flipped classroom approach implemented. The pre-course surveys served the purpose of exploring learners' expectations, i.e., how they felt about practising English using online courseware, and how they perceived that carrying out a debate in a foreign language could help them pursue their learning goals. The post-course surveys allowed us to compare initial prospects with the students' perceptions upon course completion. The results showed that the learners had high expectations and were positive about part of their instruction being conducted autonomously outside the class and a large part of the contact hours spent on preparing a debate collaboratively with their team members. The results of the pre and post surveys were largely aligned, indicating that learner needs had been largely satisfied.

**Keywords** Flipped teaching · Massive open online course · English as a foreign language · Debate

## 1 Introduction

According to the Flipped Learning Network (2014, n.p.), "Flipped Learning is a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students

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as they apply concepts and engage creatively in the subject matter". In many respects it can be seen as a form of blended learning where face-to-face teaching is combined with e-learning that takes place outside the classroom. It is largely dependent on a learner-centred approach that relies on the students' autonomy and responsibility to engage in out-of-class activity (Huang & Hong, 2016) which must necessarily take place to avoid breakdowns in learning progress and, thus, facilitate the exploration of curricular content in greater depth during classroom time with the instructor.

In their systematic review of flipped classroom practices in English language teaching (ELT), Turan and Akdag-Cimen (2020) analysed 43 studies published from 2014 onwards and identified a number of advantages as reported by the authors of those studies. The advantages quoted are: encouraging learner motivation, engagement and attitude toward language learning; fostering peer interaction; enhancing learner preparedness; boosting learner achievement; decreasing learner anxiety; increasing use of deep learning strategies and higher order thinking skills; improving passive (listening and reading), as well as productive language skills (speaking and writing); facilitating vocabulary acquisition, and improving grammar skills. As can be seen, the range of advantages covers the whole spectrum of language learning, a fact that leads us to believe that Flipped Teaching may be seen as a holistic approach to language learning. Most of those studies, however, are based on quantitative data, that is, on a unilateral method of analysis that, in our view, should have been supplemented with qualitative data in order to produce a more universally reliable picture.

Although a language learning classroom can be flipped in many ways, the model described in this chapter relies on content delivery through a Massive Open Online Language Course (LMOOC) designed for upper-intermediate learners of English as a foreign language and on a Debate project.

The LMOOC supported autonomous learning with video recorded micro lessons dealing with theoretical concepts (i.e., grammar explanations and use of language) which were further developed into listening, reading, pronunciation and vocabulary practice activities. Because of the limitations of currently available MOOC platforms, however, designing activities that allowed learners to engage in authentic communication was only partially achieved (Gimeno-Sanz, 2020). To by-pass this difficulty and seek opportunities for learners to engage in real communication and produce authentic language exchanges, classroom time was primarily devoted to preparing a debate, thus giving students the opportunity to develop, not only language skills, but also transversal skills based on discussion, argumentation, justification and critical thinking.

This chapter thus focuses on a possible way of implementing Flipped Teaching in Higher Education combining autonomous learning by means of an LMOOC and focused second language (L2) classroom practice by implementing a Debate project.

To elicit how learners foresaw participating in an ESP course based on Flipped Teaching practices that relied on two very different learning scenarios (an LMOOC and a Debate) and to explore what their expectations were and their degree of

satisfaction upon course completion, the students were asked to complete two pre- and post-course surveys. One focused on the LMOOC and the other on the Debate project. Lastly, the learners were also requested to answer a specific questionnaire querying about the particular Flipped Teaching methodology applied in this ESP course. In the Results and Discussion section below, these issues are discussed in detail.

## **2 Participants**

The Flipped Teaching experience described in this chapter was conducted during two consecutive years with two cohorts of third-year Aerospace Engineering students (7 female and 26 male), enrolled on a B2 level ESP (English for Specific Purposes) course at the Universitat Politècnica de València (UPV), Spain.

## **3 Instruments**

Firstly, the students were asked to take a commercial placement test to ensure that their level of English was aligned with the requirements of the LMOOC. The entire group scored favourably, above the B1 threshold (as described in the *Common European Framework of Reference for Languages*; Council of Europe, 2001). Secondly, a pre-course survey was administered to the students at the start of the course to gather information about their expectations in terms of using an online course to prepare content at home autonomously as part of the Flipped Teaching approach and employ classroom time to consolidate knowledge, put it into practice and solve doubts. Thirdly, a similar survey was administered to seek information about the student's overall satisfaction upon completion of the LMOOC. Parallel surveys were also administered at the start of the Debate project and after the live debate session had taken place. Lastly, a questionnaire was used to analyse learner perception in terms of the Flipped Teaching approach.

## **4 Context and Distribution of Time**

The course took place once a week during a 16-week semester in a 3-h face-to-face session. During the 3-h session, the first hour was devoted to clarifying content from the LMOOC and the following two, to the Debate project. Upon passing the course, students were awarded 4.5 European credits (ECTS).

## 5 Teaching Approaches Implemented

The three elements of the teaching approach implemented (Flipped Teaching, LMOOC, and Debate) are described in this section.

### 5.1 *Flipped Teaching*

Flipped Teaching, which is based on learner engagement and active learning, provides an enhanced scenario for the instructor to deal with mixed levels, student difficulties, and differentiated learning preferences during in-class time. It moves activities, including those that may have traditionally been considered homework, into the classroom. In a flipped classroom, students watch online lectures, collaborate in online discussions, or carry out research at home while engaging in concepts in the classroom with the guidance of a mentor (Europass Teacher Academy, 2020).

Table 1 summarises the Flipped Teaching model implemented in the upper-intermediate EFL course focusing on what was pursued and how it was achieved (Gimeno-Sanz, 2020).

Table 2 compares traditional teaching with the flipped model that was implemented for the course. As we can see, there is an extra step prior to the actual class which students have to comply with to avoid being left behind. The bulk difference lies in class time which was traditionally dedicated to the teacher lecturing and the students note-taking.

### 5.2 *MOOC*

MOOCs in general are open access online courses designed for self-access learning yet delivered following an academic calendar. Customarily, many of these courses are also available on a self-paced basis after the first calendar iteration. Being self-paced has important implications on learning. As such, enrolees do not have direct access to tuition although the Forum more often than not serves as a space for learners and teaching assistants alike to provide answers to any technical or content-related queries.

The LMOOC used to flip this course was the *InGenio First Certificate in English Online Course & Tester – Module 1* (Gimeno-Sanz et al., 2018).<sup>1</sup> This is the first of

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<sup>1</sup>Modules 1 and 2 of the *InGenio First Certificate in English Online Course & Tester* were broken up into 4 MOOCs that are available free of charge from [edx.org](https://www.edx.org). All four MOOCs comprise a Professional Certificate in Upper-Intermediate English (<https://www.edx.org/professional-certificate/upvalencix-upper-intermediate-english?index=product&queryID=cdbdff00763974c286c71a1d89ce84fd1&position=1>). To date, over 300,000 learners from 258 different countries have enrolled on these MOOCs.

**Table 1** The Flipped teaching model in the upper-intermediate EFL course

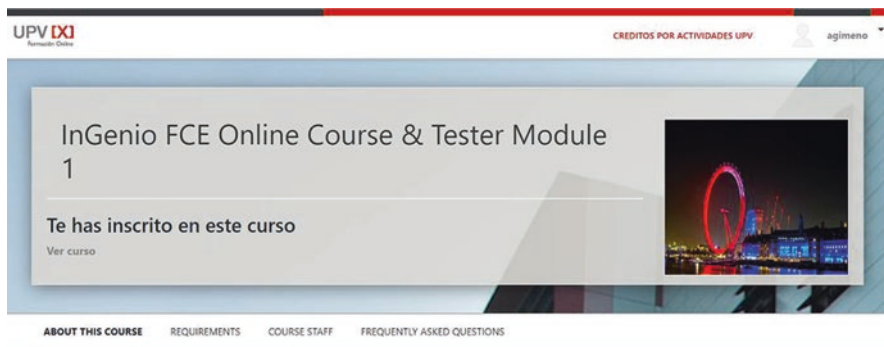
What	How
A flexible learning environment by providing opportunities for students to choose when and where they want to learn.	Using the B2 level LMOOC: <i>InGenio First Certificate in English Online Course &amp; Tester</i> (Gimeno-Sanz et al., 2018)
Using class time to discuss each learning topic in more depth, promoting a learner-centred approach. Encouraging students to be actively involved in knowledge construction.	Clarifying doubts that may have arisen during autonomous student work using the LMOOC and by working on the Debate project.
Determining intentional content, i.e., what materials students should handle on their own that serves as input to help them take subsequent syllabus-aligned action and what content should be taught in class by the teacher.	B2 level LMOOC content and individual research carried out for the Debate project.
Observing, providing students with timely feedback, continuously assessing their work, and helping them master content.	Monitoring progress on the B2 level LMOOC and supervising the collaborative work carried out for the Debate project through shared documents.

**Table 2** Comparison between traditional and Flipped Teaching in the B2 level English subject

	Traditional	Flipped
Before class	No particular demands are expected.	Students watch EFL content through MOOC videos and complete theory-related tasks.
During class	Students listen to lecture delivered by teacher and carry out class activities.	Students conduct collaborative activities in class, do hands-on work and devote time to problem-solving.
After class	Students consolidate understanding.	Students consolidate understanding and prepare for the next class.

a two-module course co-authored by the instructor taking into account the needs of learners of English for Specific Purposes and designed as a foundation course for those wishing to sit the Cambridge First Certificate in English Examination (FCE). It is available from UPV's MOOC platform at <http://www.upvx.es>. The course comprises 16 units (to coincide with a 16-week semester) divided into 8 "course" units and 8 "tester" units. The difference between these is that the "course" units introduce new content and include video-based theory and practice activities, whereas the "tester" units are aimed at helping learners assess whether their performance complies with the required level of English. The LMOOC replicates the structure of the papers included in the FCE exam, i.e., Reading, Writing, Use of Language, Listening and Speaking, and includes 75 activities with a varying number of items each (Fig. 1).

All the exercises are automatically assessed by the system except for those designed to practice and reinforce productive skills where learners are requested to deliver open text and speaking activities. One of the assessment modes built into the



**Fig. 1** *InGenio First certificate in English Online Course & Tester. Module 1* (Gimeno-Sanz et al., 2018)

MOOC platform used<sup>2</sup> is based on peer-assessment. This was chosen for all the writing assignments in the course. These were set so that each student would have to assess three written assignments using a specifically designed rubric before they could receive their own evaluation. This type of assessment has the added value of encouraging learners to reflect on their peers' language errors, question their own errors and, to a certain extent, develop their judgment skills in complying with specific assignment instructions and content requirements.

Assessment of speaking activities could have been resolved in the same manner; however, an alternative method was implemented, i.e., students were requested to record their own oral production in response to a prompted activity which was uploaded onto the University's learning management system for subsequent evaluation by the teacher. Once again, a rubric was used for assessment. Notwithstanding, because this did not satisfy authentic speaking practice and communication, the Debate project was implemented as the solution to compensate this weakness.

### 5.3 *The Debate Project*

Debating falls under the umbrella of argumentative and persuasive language. It is a form of communication meant to convince an audience that the speaker is correct, using evidence and reason. Because a debate is a process that involves formal discussion on a particular topic where opposing arguments are put forward to argue for opposing viewpoints, this part of the subject was intended to reinforce speaking practice as well as providing students with resources to convincingly convey ideas, support them with evidence and, overall, to introduce them to the language of argumentation (Gimeno-Sanz, 2020). The tasks were broadly devoted to the following:

<sup>2</sup>The platform used was OpenEdX <https://open.edx.org>

1. Preparation phase which included:
  - (a) Distribution of roles (team in favour, team against, audience, and moderator)
  - (b) Brainstorming on possible topics to debate on
  - (c) Setting up collaboration tools for each team to share sources of information, documents to support their position and prepare their arguments
2. Introducing students to the foundations of debating by means of:
  - (a) Discussions on how debating is beneficial on a personal basis
  - (b) Presentation on debate structure, rules, and language
  - (c) Watching sample debates
3. Developing technique and practising through:
  - (a) Improvising argumentations
  - (b) Focusing on oral skills
  - (c) Drawing on presentation skills
  - (d) Giving support for reasons
  - (e) Communication strategies
  - (f) Techniques for speaking in public
  - (g) Being aware of body language

Additionally, because the debate necessarily had to focus on a topic relating to Aerospace Engineering, given the ESP nature of the course, students were asked to create a glossary to be shared among all three teams (in favour, against and audience) plus the moderator, depicting words that related to the topic under discussion. Debate topics were chosen by brainstorming and subsequently by conducting a poll. The two topics with the most votes were “Did Man really land on the moon?” and “Can we stop climate change in the near future?”, respectively. The debate took place in an appropriately equipped room where the moderator presided the session, the two opposing teams confronted each other, and the audience could witness the entire setting. The live debate was recorded for assessment purposes.

As mentioned above, two thirds of the 3-h class were allocated to the Debate project to compensate the lack of real-life communication opportunities within the LMOOC. Additionally, this activity aligned with one of UPV’s requirements to develop and assess at least two transversal skills in each subject.<sup>3</sup> The ones that were most suited to this ESP course were “effective (written and spoken) communication skills” and “critical thinking”. This implied that students should also be assessed and graded taking into account the degree of achievement of these skills. These were measured throughout the Debate project by means of class activities.

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<sup>3</sup>For further information on UPV’s transversal competences initiative, please see <http://www.upv.es/contenidos/COMPTRAN/index-es.html>



## 6 Results from the Surveys and Discussion<sup>4</sup>

This section reflects upon and discusses the data collected through the five questionnaires administered to the students to explore their expectations and satisfaction (a) with the LMOOC, (b) with the Debate project, and (c) their overall attitude towards the Flipped Teaching model applied that combined these previous two components. The LMOOC provided theory-based language instruction and practice and the Debate helped students improve their communication skills and acquire a number of transversal abilities. The results of the pre-course surveys allowed us to foresee how the students would respond to conducting autonomous curricular work outside the scheduled face-to-face classes and enable us to make any necessary adjustments. The post-course surveys helped us ratify or correct our initial beliefs in order to improve the Flipped Teaching model the following academic year. All 33 students passed the course. The average mark achieved in their final grade was 7.5 out of 10.

### 6.1 Pre-questionnaires<sup>5</sup>

#### 6.1.1 LMOOC

The pre-LMOOC questionnaire consisted of 43 questions divided into 6 sections enquiring about (1) demographics; (2) attitude toward language learning; (3) use of information and communications technologies; (4) expectations toward the course; (5) learning styles and preferences, and (6) prior knowledge about the *Common European Framework of Reference for Languages* (Council of Europe, 2001) and the First Certificate in English exam. Only a selected number of questions will be discussed in this section.

The pre-course questionnaire was completed by all 33 students. Two quarters of them responded they had previous experience learning English online, either at school or independently (n = 16, 63.6%). This is a considerable advancement compared to other studies reported in previous research (Gimeno-Sanz, 2015, 2017; Martínez Sáez, 2015) where none of the students had studied English with a self-access online course before. Five of these (15%), however, had only used an online EFL course in their first year with the same instructor as part of an optional subject called Technical English. Surprisingly, though, nearly one quarter (n = 8, 24.4%) reported only ever having used books.

Likewise, another factor that has evolved throughout these past years is the fact that, through social media and online games, students currently have more opportunities to communicate in English in real life situations (Horowitz, 2019; Lee &

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<sup>4</sup>Preliminary results of this study were presented at the 13th International Conference of Education, Research and Innovation (ICERI 2020).

<sup>5</sup>The pre- and post-LMOOC questionnaires were published in Gimeno-Sanz, A. (2017).

Drajati, 2020). The pre-survey unveiled that as many as 60% ( $n = 20$ ) acknowledged improving their English informally by playing online games through the medium of English and just under one quarter ( $N = 8$ , 24.4%), through posting messages on social media in English.

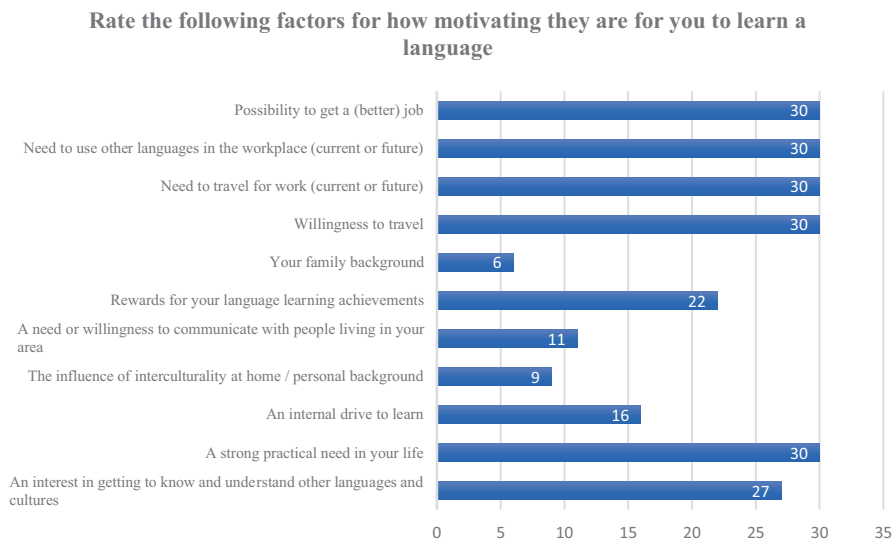
Their attitude toward learning English was, overall, very favourable as 60.5% agreed ( $n = 17$ ) or strongly agreed ( $N = 3$ ) that they were good language learners. However, 36.6% ( $n = 12$ ) did not have an opinion, and only 1 person disagreed (3%). Additionally, nearly two thirds (63.6%) reported enjoying learning languages although nearly one third (27.2%) were neutral and a further 9% ( $N = 3$ ) acknowledged not liking language learning. This data gives us an indication that students are sometimes willing to take courses despite not feeling a true affinity toward them driven by a belief that it is an essential life skill that will help them in their future.

These two factors explain, to some extent, why the students opted for this subject among five possible optional subjects. Another reason pushing them to take this subject was probably due to the fact that 90.9% ( $n = 30$ ) of them thought that improving their English would be important for their future career. The learners' opinion regarding the motivations to learn a foreign language are summarised in Fig. 2. As we can see, four of the question items with the highest score are all work-related. This supports the idea that students in Spain strongly believe that foreign languages in general, and English in particular, can help them climb professionally (Martínez Sáez, 2015; Gimeno-Sanz & Martínez-Saéz, 2016). Another prominent motivation to learn a foreign language is summarised in students experiencing a "strong practical need" in their lives and a will to travel.

As pointed out by Barak et al. (2016), "motivation is conceptualized as an internal state that arouses, directs, and sustains goal-oriented behaviour", it "is defined as the process whereby goal-directed activity is instigated and sustained", and "it determines whether or not a person will have a certain interest or be engaged in a certain activity". Furthermore, "in the context of learning, motivation is conceptualized as an internal source which enhances, maintains, or mediates cognitive development".

In line with this argument, Fig. 2 conveys the idea that, although reasons can vary, students taking this course *are* in effect motivated to learn a foreign language as an integral part of their technical degree. And this, in terms of Flipped Teaching, supports the idea that motivation can be a driving force to carry out tasks autonomously outside class time, without the vigilant eye of the instructor.

As a fair amount of time has to be spent working on the self-access LMOOC in order to be prepared for the subsequent class and be able to conduct more in-depth activities, one of the questions queried whether the students preferred working in a team or individually and, if affirmative, to state why. Over two thirds of the students (69.6%,  $n = 23$ ) responded they preferred working in teams and argued that teamwork increases an individual's effort to participate, it provides more chances of interaction and communication, opportunities to learn from each other, it leads to achieving better results, sharing knowledge and learning from peers, and is, on the whole, less boring. This led us to believe that learners would be more inclined towards the Debate project (which requires unquestionable team effort) rather than

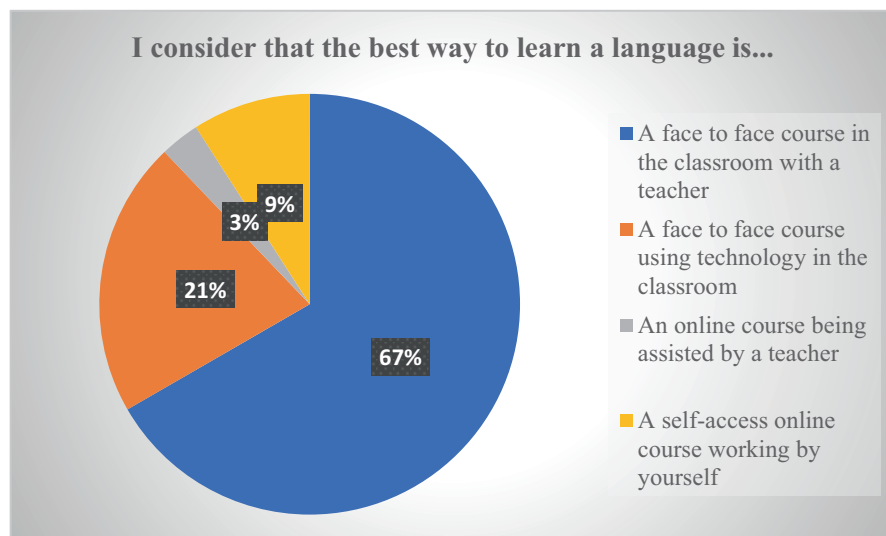


**Fig. 2** Motivation to learn a foreign language

the online course and, as a result, more motivated by that task. Nevertheless, only 18% ( $n = 6$ ) stated they preferred working individually, claiming that this caused less distractions and work was more effective. Three students (9%) said it depended on the activity at hand and only 1 (3%) that they enjoyed both ways equally.

Because we were also keen to know their opinion about how to best learn a language, we gave them 4 options to choose from: (a) A face to face course in the classroom with a teacher; (b) A face to face course using technology in the classroom; (c) An online course being assisted by a teacher, and (d) A self-access online course working by yourself. As we can see in Fig. 3, 67% of the respondents ( $n = 22$ ) chose option A; 21% ( $n = 7$ ) chose B; 9% ( $n = 3$ ) chose D, and only 3% ( $n = 1$ ) chose C, which was the option aligned with the use of the LMOOC within the Flipped Teaching approach that had been adopted for the subject. At the outset, this led us to believe that there might be some rejection on the students' behalf to learning English through the LMOOC. The vast majority, as we can see, preferred a more "traditional" classroom setting where they would be able to interact and be guided in their learning by a live teacher although nearly one quarter preferred being in a classroom with a teacher using technology-enhanced methods. The fact that 3 of them claimed preferring a self-access online learning option aligns with the fact that, as we saw above, 6 of them stated preferring working individually rather than through teamwork.

A follow-up question enquired about the preferred learning modality for this subject with three options: (a) Self-access learning (learning online without a tutor); (b) Autonomous learning (guided by a tutor), and (c) Blended learning (both combined). Nearly two thirds (60.6%,  $n = 20$ ) opted for C, that is, a blended learning scenario, which was very satisfying given that this was the approach to be



**Fig. 3** Learners' perception of what the best way to learn a language is

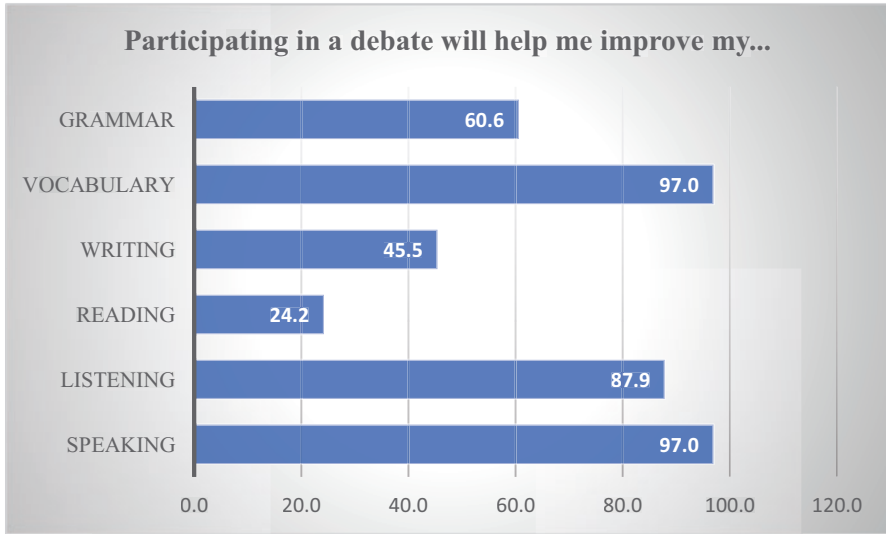
implemented in the Flipped Teaching model. One third (33.3%,  $n = 11$ ), however, preferred learning autonomously but being guided by a teacher and only 2 students (6%) selected option A, a result that aligns with the replies to two previous questions, which highlighted a preference to work independently in a self-regulated manner.

Providing learners with appropriate feedback after each completed task is central for an adequate progression in language learning (Livingstone, 2012; Nassaji, 2016). However, because providing corrective feedback is one of the most challenging features to programme into self-access online courseware, we were eager to know how important our students perceived feedback. Unsurprisingly, all 33 of them (100%) answered positively to the question "Is it important for you to get feedback in order to improve your language skills?". This led us to be even more aware of the importance of delivering appropriate and timely feedback after each of the tasks comprising the Debate project.

### 6.1.2 Debate

With regard to the Debate project, only 1 student had prior experience so it was very important to phase the activities that would lead to the live debate and provide appropriate training and practice.

As we can see in Fig. 4, as regards language, students were under the impression that participating in the Debate project would help them particularly to improve their speaking skills (97%,  $n = 32$ ), acquire new vocabulary (97%,  $n = 32$ ), and improve their listening skills (87.9%,  $n = 29$ ). To a lesser extent, students expected



**Fig. 4** Expectations as to what language skills and elements would be improved

to improve their grammar (60.6%,  $n = 20$ ), writing skills (45.5%,  $n = 15$ ), and reading skills (24.2%,  $n = 8$ ).

Additionally, students also placed high expectations on improving or even acquiring a number of transversal skills. As we can see in Fig. 5, 93.9% ( $n = 31$ ) of the students had high hopes of being able to improve their public speaking skills through becoming acquainted with debating techniques and practices. In addition, 78.8% ( $n = 26$ ) expected to learn to control their emotions when speaking in public, think on their feet, be a better critical thinker and to better articulate their thoughts. Learning to collaborate with others in teamwork (69.7%,  $n = 23$ ) and learning to resolve conflict (66.7%,  $n = 22$ ) were also high on the scale. On the lower side of the scale were their expectations to boost their self-confidence (63%,  $n = 21$ ), learn to empathise with others (60.6%,  $n = 20$ ), overcome shyness (60.6%,  $n = 20$ ), improve their researching (57.6%,  $n = 19$ ), organizational (54.5%,  $n = 18$ ), note-taking (54.5%,  $n = 18$ ) and presentations skills (51.5%,  $n = 17$ ), as well as expanding their views about world issues (54.5%,  $n = 18$ ), constructing meaning out of complex situations (54.5%,  $n = 18$ ), and being more socially conscious (51.5%,  $n = 17$ ).

As we can see, even the lower scores are all above the 50% mark, which indicates that all the students thought debating would have a favourable influence on their transversal skills.

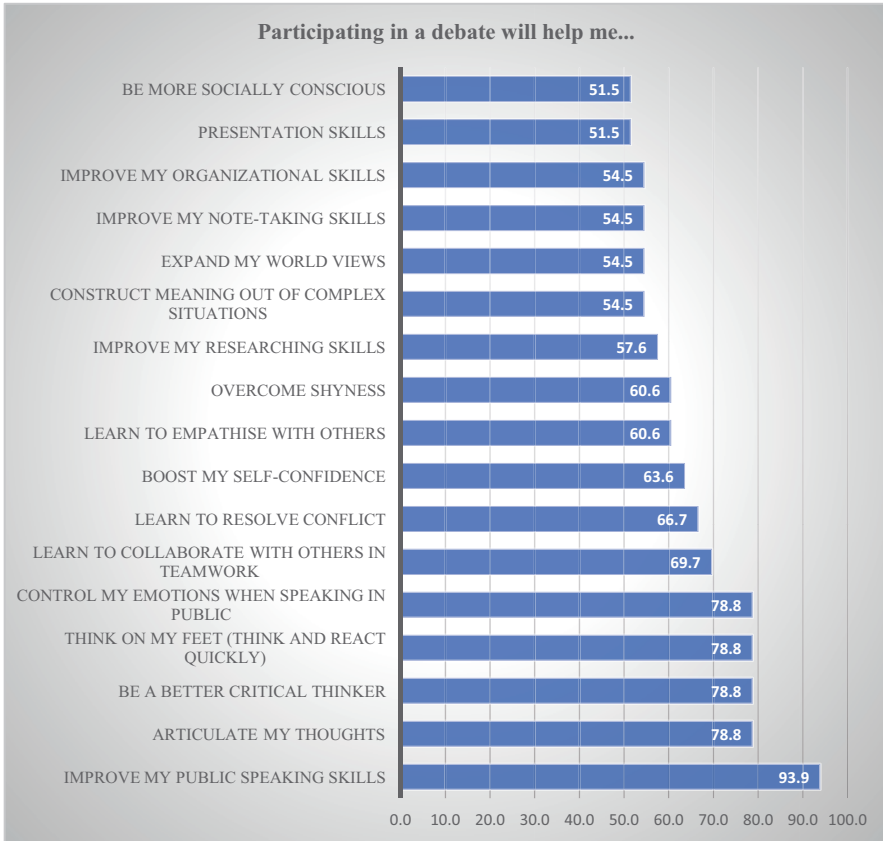


Fig. 5 Expectations as to what transversal skills would be improved

## 6.2 Post-questionnaires

### 6.2.1 LMOOC

Thirty-one students (94%) completed the post-LMOOC survey. Because the *InGenio FCE Online Course & Tester* (Gimeno-Sanz et al., 2018) was the core of the independent work students had to carry out in preparation for class work with the instructor, one of the questions enquired whether they thought the LMOOC encouraged autonomous/independent learning. A favourable opinion was crucial to support the Flipped Teaching model adopted. As we can see in Fig. 6, on a 7-point scale (from 1 “strongly disagree” to 7 “strongly agree”<sup>6</sup>), the results showed that more than 90% agreed with this assertion (14 selected totally agree; 8 selected

<sup>6</sup>The scores correspond to 7 = Strongly agree, 6 = Agree, 5 = Slightly agree, 4 = Neither agree nor disagree, 3 = Slightly disagree, 2 = Disagree, 1 = Strongly disagree.

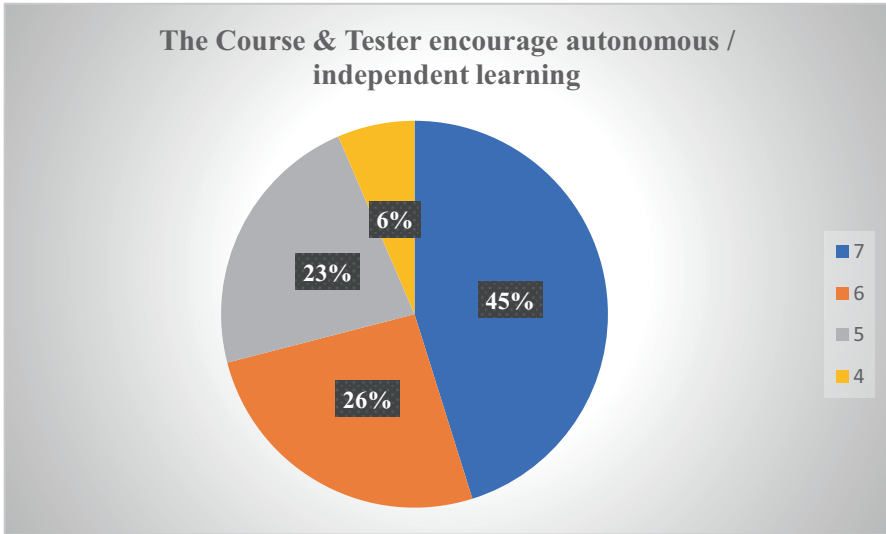


Fig. 6 Learners' perception regarding autonomy

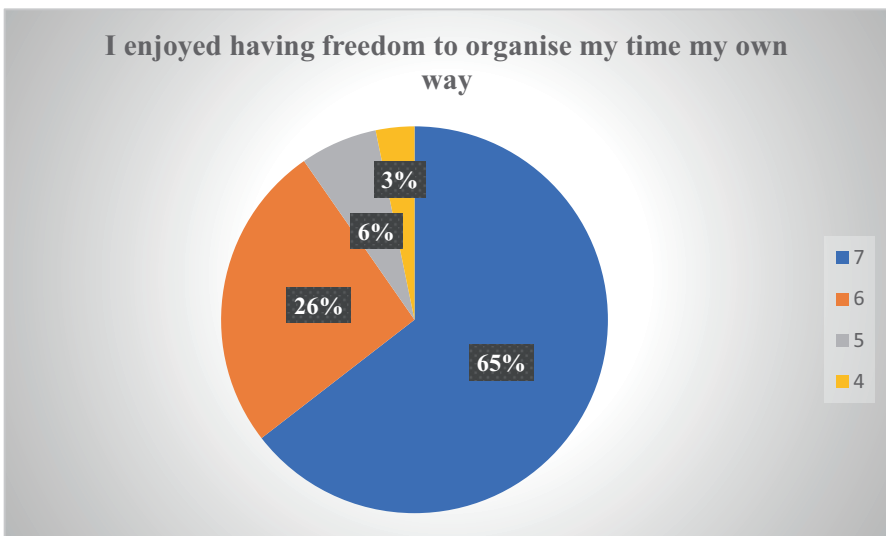


Fig. 7 Learners' perception regarding self-paced study

agree; 7 selected slightly, and 2 selected neither agree nor disagree). These two students who selected option 4 (just above average) align with the results in the pre-course questionnaire discussed above because, as mentioned, there were a reduced number of students who were not inclined to studying English using an online self-access course.



To reinforce this idea, 80% of the learners also reported they had found it easy to work autonomously/independently with the online course.

Because in this flipped model learners were obliged to manage their own time working on the LMOOC to prepare for the following class, we asked them whether they had enjoyed working on a self-paced basis, having the freedom to organise their own time and pace. The vast majority (96.8%) answered positively: 20 selected totally agree; 8 selected agree, 2 selected slightly agree, and only 1 student did not have a clear opinion (Fig. 7). These results align with the trends seen in the replies to the questions discussed above where there is evidence that some students were inclined towards teacher-directed classroom teaching.

A question that also indicated the level of independence that students were willing to accept, which is crucial for Flipped Teaching, can be seen in Fig. 8. Students were asked to report whether they enjoyed being able to self-assess their performance by accessing the progress reports included in the LMOOC. The results show that 93% were satisfied with these automatically generated progress reports. However, two students (6%) did were neutral.

Because the flipped part of the subject, which ordinarily would have taken place in the classroom with the instructor, using a textbook, we were also keen to know whether our students' motivation to learn was influenced by the medium of instruction. The results show that this was indeed the case. Over three quarters (77.4%) -those who selected strongly agree [22.6%, n = 7], agree [32.3%, n = 10] and slightly agree [22.6%, n = 7]- granted that it did. And, when asked whether they found using technology to be more motivating than traditional language learning materials, nearly three quarters (74.2%) agreed -those who selected strongly agree [29%, n = 9], agree [29%, n = 9] and slightly agree [16.1%, n = 5]-, providing evidence

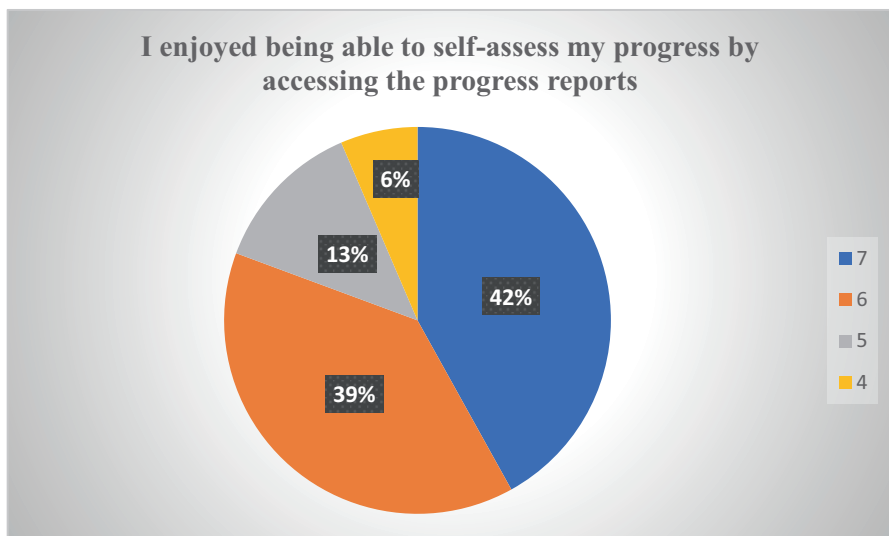


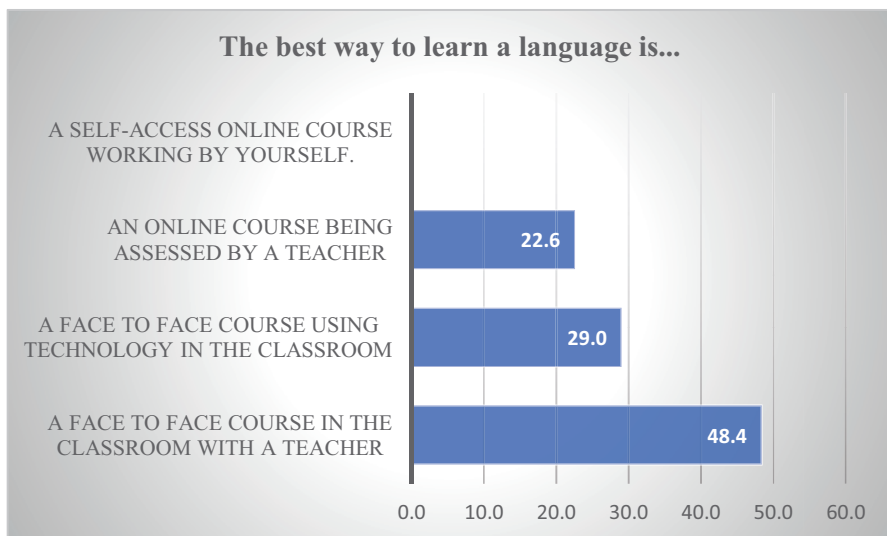
Fig. 8 Learners' perception regarding automatically generated progress reports

that they were favourable (upon completion of the course) to integrating the use of an EFL MOOC in this subject. Going deeper into this aspect, students were also asked whether they felt more at ease working in an online environment. To this, 80% agreed -those selecting strongly agree [29%, N = 9], agree [25.8%, N = 8] and slightly agree [25.8%, n = 8]. This aligns with other studies in which there is evidence that shy students tend to shield themselves behind online learning (Gimeno-Sanz, 2015, 2017; Martínez Sáez, 2015), where there is no live interaction with fellow learners or the teacher. To reinforce the idea that these students enjoyed improving their English using an online course, many agreed with this (80.6% adding up strongly agree [25.8%, n = 8], agree [32.3%, n = 10] and slightly agree [22.6%, n = 7]).

However, it cannot be ignored that there has also consistently been a percentage of students, albeit low, who have underlined the fact that they prefer a model of tuition where they can rely on a teacher in a classroom supervising their work and providing them with appropriate and timely feedback, who do not enjoy technology-based learning and who do not find online courseware appealing. Therefore, to balance the needs of our learners, we reached the conclusion that the Flipped Teaching model would be appropriate, and, within it, the Debate project would compensate the lack of authentic communication in the LMOOC.

To see whether students confirmed their preferences as to the best way to learn a foreign language once the course was completed and their grades delivered, the same question was repeated in the post-course questionnaire. The results are displayed in Fig. 9.

As we can see by comparing Figs. 3 and 9, contrary to the data extracted from the pre-questionnaire, on this occasion, no student indicated a preference for option (d)

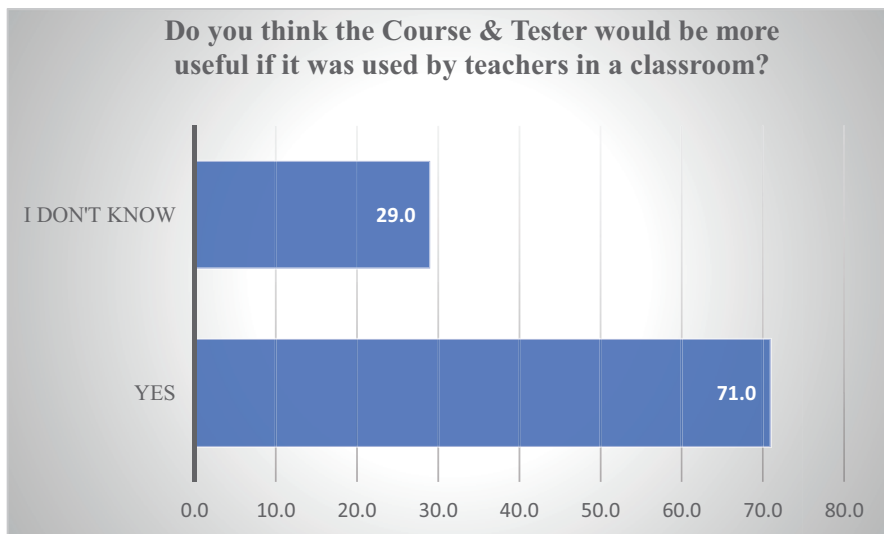


**Fig. 9** Learners' perception regarding the best way to learn a language

*A self-access course working by yourself*, which had initially been selected as their preference by 9% of the learners. However, option (c) *An online course being assisted by a teacher*, which had only been selected in the pre-questionnaire by 3%, had now been chosen by 22.6% (n = 7). We were satisfied to see a slight increase towards this preference because, as mentioned above, option C aligned with the use of the LMOOC within the Flipped Teaching approach that had been adopted. A few more students were now inclined to prefer option (b) *A face-to-face course using technology in the classroom* (29%, n = 9) compared to that at the beginning. Just under half of the group, nevertheless, opted for option (a) *A face-to-face course in the classroom with a teacher* (48.4%, n = 15), which was considerably lower compared to the responses in the pre-questionnaire. This data ratified the idea that students still preferred on-site classroom-based tuition with a teacher they could interact with but, after working with the LMOOC where they could watch their instructor deliver the class explanations on video, many of the students felt more inclined toward a technology-enhanced classroom setting where they could turn to a teacher when the need arose. The part of the subject that aligned with this preference consisted of the tasks carried out in class in preparation and training for the live debate to take place at the end of the semester.

Taking a closer look at their attitude toward integrating the LMOOC as a classroom activity (see Fig. 10), although almost one third of them were not sure (29%, n = 9), 22 of them (71%) believed that using the *InGenio FCE Online Course and Tester* (Gimeno-Sanz et al., 2018) as a classroom task would be useful and lead to language gains.

To explore whether the LMOOC was aligned with the amount of time allocated to it, students were asked if they had had sufficient time to complete the online



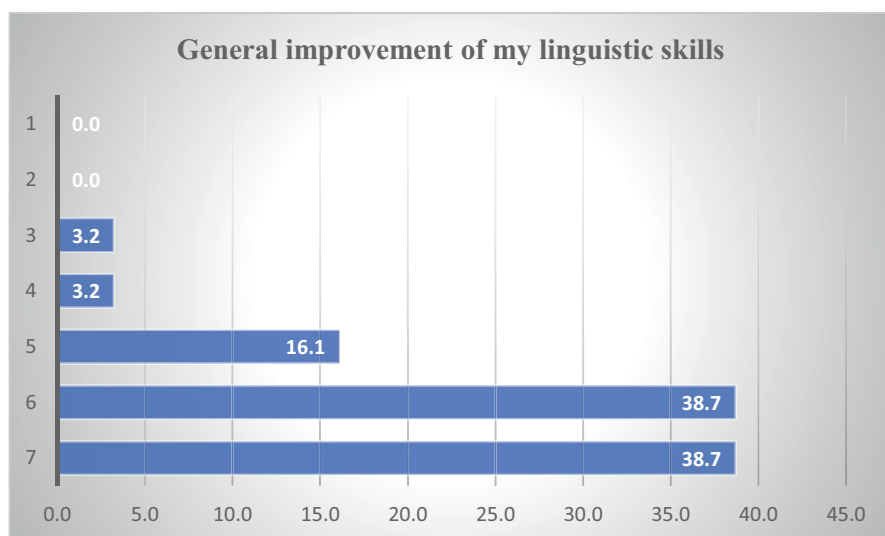
**Fig. 10** Learners' attitude to integrating the LMOOC in the classroom

course within the given timeframe. Most of them acknowledged having had sufficient time (61.3%,  $n = 19$ ) but the remaining 38.7% were either not sure (16.1%,  $n = 5$ ) or thought not (22.6%,  $n = 7$ ). Although the subject is assigned 4.5 ECTS, which is equivalent to 45 teaching hours, the student is expected to dedicate an additional 50%, making a total of 67.5 h, which amounts to 112.5 study hours. Those 7 students who reported insufficient time were, we suspect, not aware of this fact, as reported in similar studies (Gimeno-Sanz, 2015, 2017, 2020).

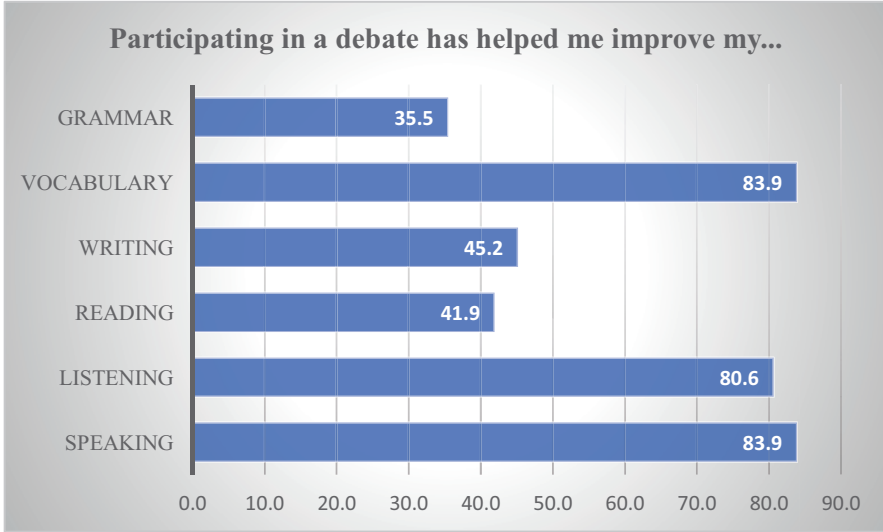
Lastly, we were also interested in knowing what the students' perception was regarding their language improvement. Considering that the more one advances in consolidating a foreign language, the more difficult it is to be aware of the progress made, we were satisfied to see that over three quarters (77.4%,  $n = 24$ ) perceived that they had improved considerably (12 strongly agree and 12 agree), and 16.1% ( $n = 5$ ) slightly agreed. Only 1 student was under the impression they had not made much progress in terms of language acquisition (3.2%) and another student (3.2%) neither agreed nor disagreed, as illustrated in Fig. 11.

## 6.2.2 Debate

In order to compare how much the learners thought they had improved their language skills and their transversal skills after the Debate project had taken place, we asked them the same questions as in the pre-survey. As shown in Fig. 12, and if we compare with Fig. 4, we can see that the proportions are similar although the numbers are slightly lower. The students, as they had predicted, were under the impression they had improved their speaking and listening skills considerably, as well as



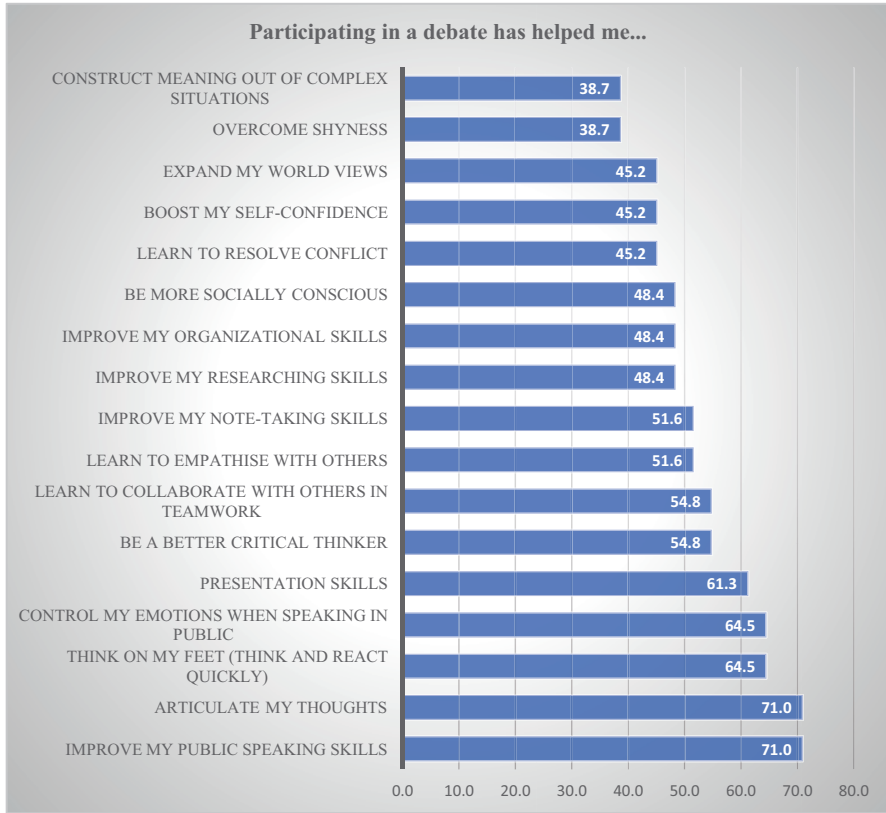
**Fig. 11** Learners' perception regarding general improvement of linguistic skills



**Fig. 12** Perception as to what language skills and elements had been improved

having acquired new vocabulary relating to the topic of debate. However, they had not predicted improving their reading skills, probably because at the outset they were not aware of all the research they would have to conduct in order to properly document their position in favour or against the resolution, much of which meant reading written documents (either online or in print). Similarly, they had foreseen learning more grammar than they acknowledged at the end of the project (60.6% [n = 20] thought at the beginning they would learn grammar, whereas only 35.5% [n = 11] perceived they actually had done). Improvement of writing skills did not vary from one questionnaire to the other.

Similarly, when queried about their perception in terms of acquiring or improving their transversal skills, despite acknowledging an improvement, their expectations were slightly higher than the perception of actual improvement at the end of the project. If we compare Figs. 5 and 13, we can see that in the former all the skills were above the 50% mark, meaning that over half of the students expected to improve all the skills mentioned, however, if we turn to what they reported at the end, we can see that out of the 17 skills, only 9 of these were acknowledged as having been improved, leaving the remaining 8 skills at the lower part of the scale. There was a coincidence in expectations and perceptions in improving public speaking skills (which received the highest score); being able to articulate one’s thoughts more efficiently; being able to think and react quickly; control their emotions when speaking in public; be a better critical thinker; and learn to collaborate with others in teamwork. Their ability to resolve conflict, helping to boost their self-confidence, overcoming shyness, expanding their world views, and constructing meaning out of complex situations, however, was scaled down considerably in the post-questionnaire. Improving their presentation skills had not been foreseen to the



**Fig. 13** Perception as to what transversal skills had been improved

extent they reported at the end but their researching, note-taking and organizational skills were all acknowledged as having improved.

### 6.2.3 Flipped Teaching

Students' opinions about the Flipped Teaching approach were also favourable: 87.5% ( $n = 27$ ) of them were satisfied and highlighted that what they had appreciated most was:

- The online materials used in the subject (i.e., the LMOOC).
- The face-to-face classroom activities with the teacher (i.e., the debate).
- A closer relationship with the teacher and a sense of effective guidance.
- A closer relationship with fellow students (e.g., collaborating on preparing the debate in teams).
- The assessment methods used to grade the subject (i.e., formative, summative and peer-assessment).

- The teacher's planning and organisation of the subject.

As we can see, overall, students were highly satisfied with the methodology underpinning the subject. This is in line with Rodríguez et al.'s (2017) findings concluding that integrating a MOOC into a flipped class raises learner motivation and lures them towards getting more involved in their own learning process.

## 7 Conclusions

In this chapter we set out to determine whether Flipped Teaching could be successfully implemented in a B2 level English language course within the Aerospace Engineering degree at UPV by combining an LMOOC and a Debate project. To gain insight into our students' attitudes towards this mode of blended learning, sundry surveys were administered to shed light on their degree of satisfaction and draw conclusions as to the reasons leading to that feeling of fulfilment.

Evidence from the pre-course surveys and the post-course surveys shows that the students enrolled on the subject were highly satisfied with the Flipped Teaching approach adopted and were largely satisfied with the two components integrating the subject, that is, autonomous learning via an LMOOC specifically designed by the instructor for the subject and a Debate project to compensate the lack of authentic speaking practice in the LMOOC. Notwithstanding, there was also evidence that some respondents clearly preferred a more teacher-centred approach, whereby explanations are delivered in the form of lectures and where activities are controlled and supervised by the teacher in a traditional classroom setting. It therefore seems that, despite students being absolute digital natives (Prensky, 2001), some still prefer a more traditional scenario (Millar & Schrier, 2015).

Like Bartalesi-Graf (2017), this study also found evidence that in the proposed blended learning model greater flexibility was accomplished without sacrificing achievement. Learners were able to manage their time according to a set number of learning goals per session, reflect on content that was not understood, bring these concerns or queries to the class for discussion with the instructor and, on the whole, improve their learning outcomes (Glance et al., 2013).

Additionally, in line with Orsini-Jones et al. (2017), this study confirmed that the LMOOC was a useful addition to the course especially because students appreciated the flexibility to access the extra materials afforded by the online environment and thought that using digital resources to learn a foreign language would be motivating.

Furthermore, other studies such as García-Sánchez (2020), postulate that debate as a classroom activity, "can reinforce various skills under the scaffolding of EFL multimodal communication, since an interdependent collaborative learning environment is established with the purposes of making decisions, providing meaningful and justified contributions, and connecting socially and intellectually with other team members in the natural environment of the conversational dispute" (p. 43).



This implies that throughout the preparation stages of the debate, students become aware that they must necessarily interact and collaborate, and that they ultimately rely on their fellow teammates' engagement and responsibility in order to succeed in the outcomes, i.e., being as convincing as possible to dialectically outshine the opposing team. According to García-Sánchez and Burbules (2017), debate -understood as a learning task- encompasses the development of emotional, cognitive and collaborative skills, all of which are crucial assets in today's globalised world. This corroborates the findings of this study where students clearly pointed out that they had learnt to articulate their thoughts more clearly in English, while being more critical and selective with the amount of information available to them on the web to explore the given topic and had -to some extent- learnt to gain control over their emotions when in disagreement with others (see Sect. 6.2.2 above). These skills fall into the category of career and life skills, as defined by Trilling and Fadel (2009) which, as pointed out by UNESCO author Madhu Singh in 2003, are defined as "a mix of knowledge, behaviour, attitudes and values and designate the possession of some skill and know-how to do something, or reach an aim" (p. 4).

In terms of optimizing online English language learning and teaching, this study provides empirical evidence that leads us to believe that an overarching Flipped Teaching methodology combining online instruction and face-to-face language practice is motivating for higher education EFL learners for the following reasons: (a) flipping the class with an LMOOC relieves the teacher from repetitive instruction within the classroom, thus facilitating more class time to resolving personalised learner queries and doubts; (b) the multimedia elements (videos, self-assessment tests, recording utilities, interactive exercises, etc.) within the LMOOC are aligned with the current expectations of digital natives; and, (c) the Debate project provides an intellectually demanding task that opens a learning scenario that students find challenging enough to become engaged in.

To conclude, the educational implications of this Flipped Teaching model are grounded on the pedagogical foundations of MOOCs (i.e., efficacy of online learning, retrieval learning, mastery learning, enhanced attention and focus, and peer assessment), as described by Glance et al. (2013), and on those of Debate (critical thinking, public speaking skills, enhanced teamwork and collaboration, etc.). The model can therefore be implemented in virtually any language learning context aiming to foster active learning.

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# Exploring Moodle Effectiveness to Foster Online ESP During the COVID-19 Pandemic: An Analysis of Task Performance and Students' Perceptions in Online Language Learning Contexts



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**Abstract** Education during the COVID-19 pandemic has experienced a massive shift towards online modes of instruction in higher education. This paper presents an example of such adaptation during the spring 2020 lockdown in the context of an ESP course taught to psychology students at a Spanish university. Specifically, we adopted the Cybertask model (Girón-García C. Learning styles and reading modes in the development of language learning autonomy through 'Cybertasks'. Barcelona. ed. Universitat Jaume I. Retrieved November 7, 2020, from <http://hdl.handle.net/10803/125440>, 2013; Girón-García & C, Boghiu-Balaur S. *Revista de Lingüística y Lenguas Aplicadas* 16:95–122. <https://doi.org/10.4995/rlyla.2021.13950>, 2021) to design an online task about psychotherapy that could be integrated into the Moodle platform in the form of a Lesson to explore the effectiveness of this asynchronous 'Cybertask-based Lesson' as compared to an equivalent synchronous online task guided by the teacher during a live online session. The study examines the outcomes of each type of task by assessing the students' achievement in learning new specialized content as well as their impressions regarding perceived interest and usefulness. 144 students were assigned to one of three different groups. The Experimental group 1 (N = 40) performed the Lesson/asynchronous task, the Experimental group 2 (N = 38) did the teacher-guided/synchronous task while the Control group (N = 36) did a regular online class addressing a different topic. The results indicate that, regarding achievement, both pedagogical alternatives are effective to a similar extent. However, task perception scores were significantly higher in the Experimental group 1. Further research is needed to explore the potential benefits of similar asynchronous tasks in the current higher education panorama, where there is a progressively greater demand for online learning.

**Keywords** ESP · Moodle · Performance · Perceptions · Online language learning

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## 1 Introduction

The COVID-19 crisis prompted an unexpectedly rapid digital transformation of higher education programs and methodologies. Since March 2020, universities have faced many challenges, including ad hoc modifications to curricula in order to adapt methodologies and materials to the online format. Technological advances have historically brought about changes in the design of curricula in higher education to allow for the incorporation of the advantages of online learning formats (Schmar-Dobler, 2003; Benson & Chik, 2010). Nevertheless, the advent of the forced technological revolution sparked by the pandemic crisis has led to global changes in education, and therefore also teaching and learning in the areas of English as a Foreign Language (EFL) and English for Specific Purposes (ESP) (Cf. Isik-Tas & Kenny, 2020; Querol-Julián & Beltrán-Palanques, 2021; Beltrán-Palanques, *this volume*).

In Spanish university degrees, EFL is usually approached early in the bachelor's degrees through ESP courses which allow students to make their first contact with the specialized Foreign Language (FL) by handling content directly related to their degree's scientific and/or professional areas of expertise.<sup>1</sup> These courses generally include competences like knowledge of a FL, instrumental command of the FL, autonomous learning, or the ability to understand and communicate appropriately using the FL in specialized contexts. These courses are also often devised to support the students' development of autonomous learning abilities. In turn, these abilities are expected to help them to handle specialized materials in English in other degree courses and their future professional careers (Cf. Fortanet-Gómez & Räisänen, 2008).

Task-Based Language Teaching (TBLT) (Leaver & Willis, 2004) has great pedagogical potential and offers a considerable number of opportunities to be applied both in and outside the ESP classroom setting. This is precisely one of the multiple benefits that TBLT provides since tasks that are applied outside the classroom (Skehan, 1998) are conceived by students as particularly valuable learning chances (Nunan, 2004). TBLT tools and procedures seem very convenient for the online adaptation of course materials (González-Lloret, 2016), considering that some studies have reported a range of positive outcomes derived from their integration in the classroom. This is the case, for example, of WebQuests (Dodge, 2001), TalenQuests (Koenraad, 2002), and WebQuest-based model tasks, also called 'Cybertasks' (Girón-García, 2013). In addition, the combination of Information and Communication Technologies (ICTs) in the classroom with a Content-Based Instruction (CBI) approach (Brinton et al., 1989) to deal with the contents of higher

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<sup>1</sup> While the widespread use of the English language and the Spanish education system allow students to have some prior general knowledge of the FL before entering university, English courses higher education settings focus primarily on specialized situations and contexts. In most Spanish bachelor's degrees, this is materialized in ESP subjects included in the curricula that are devised to meet the specialty needs of each degree and area of expertise. It is interesting to note that English as a Medium of Instruction (EMI) (Rose et al., 2021) is progressively growing in Spanish universities (Dafouz & Smit, 2020), but this is an incipient process and ESP instruction still predominates.

education ESP courses has several benefits, for example, the encouragement of students' autonomy and engagement in their own learning process (Cf. Girón-García & Boghiu-Balaur, 2021).

Against this backdrop, this study illustrates a case of adaptation from face-to-face to the “forced online format” imposed during the 2020 lockdown in an ESP course addressed to first-year undergraduate psychology students at a Spanish university. Due to the varied casuistry and life circumstances experienced during the pandemic, not all students had the means and availability to work remotely and synchronously on a daily basis. This study considers this contextual circumstance to explore the effectiveness (in learning new specialized contents) and students' perceptions of two alternatives of online tasks offered to them during the lockdown. One was an asynchronous autonomous online learning Cybertask adapted to the *Moodle LMS Lesson* format (Dougiamas & Taylor, 2002) and the other was an equivalent synchronous online task guided by the teacher during a live online session.

### ***1.1 Higher Education and the COVID-19 Context***

Before the pandemic, with the exception of distance learning universities, teaching in most Spanish universities was mainly face-to-face. This is also the case of the university in which this study was conducted. The global spread of COVID-19 and the increased concerns over a possible long-term lockdown forced universities and other educational institutions to close their doors and move their instruction online. Since the spring of 2020, the efficient use of the internet and other online resources integrated into online platforms like Moodle has become essential for both students and educators (Cf. Adedoyin & Soykan, 2020; Fortanet-Gómez & Ruiz-Madrid, [this volume](#); Kaufmann et al., [this volume](#)). Since the adaptation to the European Higher Education Area (Broucker et al., 2019), university degree courses have progressively shifted from teacher-centered to student-centered approaches. In the attempt to promote learning through technologies derived from the pandemic, higher education institutions should be particularly aware of the importance of developing approaches that facilitate students' autonomous learning with little guidance from the teacher. These approaches should encourage students to take responsibility for their own learning process while also creating new knowledge from already existing information (Villanueva, 2020), as well as from the pedagogical and online resources proposed to them by teachers.

The combination of CBI (whose focus is placed on the subject matter in the language being learned) with e-learning TBLT in the classroom often boosts a more dynamic pedagogical landscape that becomes particularly engaging for students when it is exploited in Cybertasks (Girón-García & Boghiu-Balaur, 2021). Technology and TBLT provide an appropriate combination that leads to the emergence of *Technology-mediated TBLT* (González-Lloret, 2016). The essential principle of this approach is “learning by doing” (2016, p. 34) through relevant tasks involving the use of authentic materials to process contents in the FL. Under this

view, an effort should be made to provide students with meaningful learning tasks that are in line both with course objectives and contents and their own specialized language learning needs. Other investigations have proved that CBI, as a means of instruction, engages students in learning content more effectively when the aforementioned tasks are designed to guide the students' own (autonomous) learning process from a student-centered approach (Richards, 2006); that is, one in which the learner is an active participant rather than a passive recipient of knowledge (Benson, 2001; Villanueva, 2020). "Learning how to learn" in technology-mediated environments is a fundamental ingredient of the autonomous language learning process and one of the biggest challenges in the field of education in the twenty-first century with the COVID-19 health crisis.

## 1.2 *Digital Learning Tasks: WebQuests, TalenQuests, Cybertasks, and Lessons*

Learning in an asynchronous virtual environment often involves completing a series of tasks designed by an instructor to make the most of the students' time. Over the years, there have been many types of digital learning tasks based on TBLT approaches requiring authentic resources from an autonomist perspective, such as *WebQuests*, *TalenQuests*, *Cybertasks*, and *Lessons*.

First-generation *WebQuests* (Dodge, 1997) marked a turning point in the area of Web-based activities fostering students' critical thinking through the analysis, synthesis, and evaluation of digital resources (websites, articles, forums, etc.), as well as through the management of the information offered in them. Historically, different WebQuest models have existed, like the first-generation WebQuest model (Dodge, 2001) designed for teaching content on a specific topic, or the adaptation of the concept of WebQuest for language learning known as *Language Quests* or *TalenQuests* (Koenraad, 2002). The latter facilitate the design and integration of a variety of online resources in complex tasks to promote effective FL learning in modern educational contexts (Koenraad, 2010). *TalenQuests* are an attempt to generate more effective online FL learning tasks that lead to second-generation WebQuest-based models incorporating the fundamentals of TBLT approaches, called *Cybertasks* (Girón-García, 2013). *Cybertasks* are online tasks immersing students in networked information with the objective of compiling, using, and transforming data obtained from a web search.<sup>2</sup> Furthermore, *Cybertasks* are designed around an area of interest, which might involve more or less specialized courses. Particularly, these online tasks are *not* focally targeted at learning a FL. Rather, they are designed to help students to learn a FL by turning to *content* instead of the fundamentals of language rules, for example, through the autonomous management

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<sup>2</sup>An example of *Cybertasks* used in a recent study in higher education contexts is provided in Girón-García and Boghiu-Balaur (2021).



of online contents pre-selected by the teacher. Cybertasks, therefore, are in line with CBI fundamentals and, by design, an ideal online tool for learning content in a FL while also fostering autonomy. Students need training to become more autonomous learners (Holec, 1979). The use of ICTs itself does not usually result in greater autonomy (Luzón et al., 2010). However, this training process can be boosted by introducing “technology-rich language learning environments” (Blin, 2010, p. 182) that allow the integration of adequate online resources and curriculum design materials. In this light, Cybertasks have several advantages (Cf., for example, Luzón et al., 2010; Girón-García, 2013). Some outstanding benefits relate to their potential to reinforce students’ autonomous language learning while also promoting more adequate usage of online resources proposed by the teacher in order to attain certain learning outcomes. Additionally, studies like Girón-García and Ruiz-Madrid (2014), Girón-García and Silvestre-López (2019), or Girón-García and Boghiu-Balaur (2021) have described a range of benefits of Cybertask completion. Some of these include learning how to (a) deal with learning processes and select information on the internet; (b) synthesize information, adopt critical decisions and build new knowledge; or (c) become acquainted with the basic information, key concepts, and sources provided with the aim of completing the task.

Such learning skills, entrenched in students’ use of online resources enclosed in online task-based models, could be adapted to new online learning platforms, such as Moodle LMS, in which the Lesson resource is integrated.<sup>3</sup> Lessons allow students to use pre-selected online resources through a pre-established and well-defined navigation process. This process can be driven, for example, by a series of questions posed by the teachers along the Lesson navigation path, which allows students to figure out the answers in an orderly way. Figure 1 summarizes the differentiating traits of the previously described tasks.

Although Cybertasks have many advantages, the way they are distributed to students in class involves some hindrances related to the process of downloading and getting the task to work. The creation of a Cybertask involves several documents which, for the task to work correctly, must be hyperlinked, packed, and zipped in a folder. Once the zipped folder has been made available to students, the whole “package” downloading procedure entails giving them very precise and detailed instructions. Concretely, students often need the teacher’s guidance to explore its specific contents (to find important files in the unzipped folder) and to open the task on a web browser (by clicking on the appropriate HTML file in the folder) to visualize it.

In this study, Lessons are conceived as a suitable choice for the adaptation of the Cybertask model to the Moodle platform. This adaptation is convenient because it allows for the integration of the same type of materials and online resources (already provided in the Cybertask design) and facilitates students’ access to the task via Moodle. Students, as *Moodle users*, have all those materials at their disposal for their own use both inside and outside the university context. Since this virtual platform is widely known and used by all the members of the university community (particularly teachers and students), it is easier to deliver the task in class.

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<sup>3</sup>Cf. [https://docs.moodle.org/311/en/Lesson\\_activity](https://docs.moodle.org/311/en/Lesson_activity)

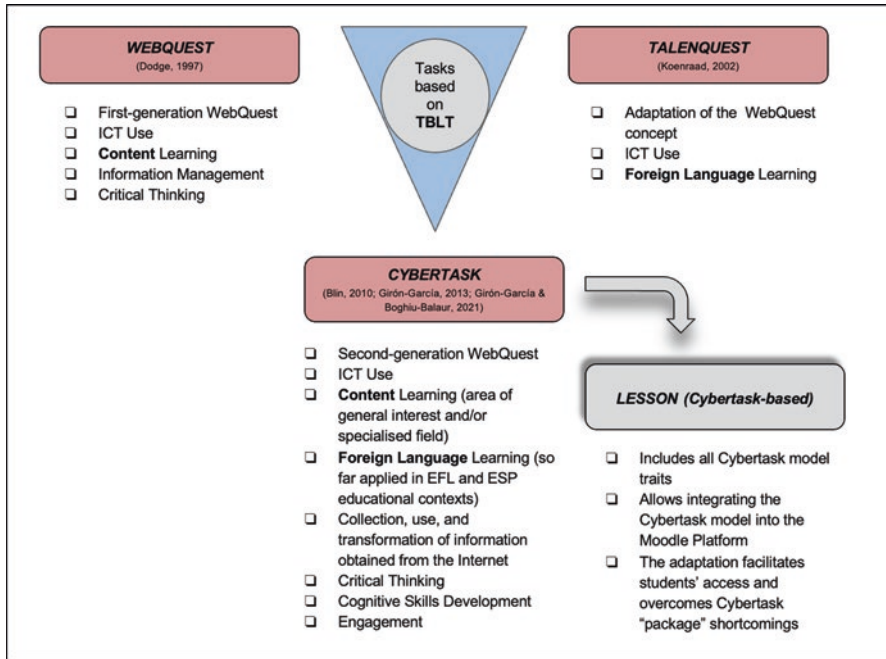


Fig. 1 Tasks based on TBLT approaches

### 1.3 Aim and Research Questions

In the framework of an imposed lockdown and the switch to the “remote online teaching mode”, we decided to implement a ‘Cybertask-based Lesson’ about different types of psychotherapy. While it had been designed for the ESP course mentioned above and implemented in class during the previous academic year, its effectiveness had not yet been tested. We thus decided to explore the effectiveness of this Cybertask-based lesson as compared to an equivalent task exploiting exactly the same contents and resources but from a more teacher-guided perspective. The Cybertask-based lesson is an asynchronous autonomous learning task in which students were asked to use text and video resources to answer specific content questions. The equivalent task is a synchronous teacher-guided task conducted during one online Google Meet session.<sup>4</sup> The study aims to examine the outcomes of each task format in terms of the students’ achievement in learning specialized task-related content, as well as their perceptions about task interest and usefulness. Two research questions are posed accordingly:

<sup>4</sup>We replicated the Lesson materials in an MSWord document format to be used in the online synchronous alternative.

**RQ1:** Is either pedagogical treatment (Lesson/asynchronous vs. teacher-guided/synchronous) more effective than the other for students to learn task-related content?

**RQ2:** Is there any difference in the students' level of interest and usefulness regarding either pedagogical treatment?

## 2 Method

### 2.1 Participants

An initial group of 173 ESP students taking the first course of the bachelor's degree in psychology at a Spanish university volunteered to participate in the study. Upon the completion of an English proficiency level test (Quick Placement Test, 2001), 121 were placed at the B1 level (CEFR, 2001), and the remaining 48 were spread across a range of A2, B2, and C1 levels. Based on the researchers' professional experience in teaching this course for several years (the same proficiency level test is administered to each new group every year), B1 is the most common proficiency level of the students. Based on this and the group size, the students with a B1 level were considered the potential participants in the study; this was done purposefully to ensure a homogeneous group. Seven more students were excluded from the data gathering process due to absence during the pedagogical implementation or because they failed to participate fully in the tasks and/or complete the tests as requested. The final sample was made up of 114 students who were assigned to one of three different groups (experimental group 1,  $N = 40$ ; experimental group 2,  $N = 38$ ; control group,  $N = 36$ ; see Sect. 2.4. below).

### 2.2 Measurement Instruments

In order to measure the participants' knowledge about the contents addressed in the pedagogical treatment, we used a "task achievement" test targeting the comprehension of the main notions of the types of psychotherapy dealt with in the task. This test had been designed and revised by a language teacher colleague (an external researcher), and pilot tested with another group of 79 students from the same course during the previous academic year, with satisfactory results. The test was composed of 16 multiple-choice questions in which students were asked to choose one answer from among three options. Correct choices led to a score of 1 and incorrect answers were given a 0 in each question. In this study, the test was used as a pre- and post-test instrument (repeated measures) to gather quantitative data on the participants' scores before and after the pedagogical treatment. In a regular classroom context (excluding this study), the test was used as a pre- and post-lesson element, so that students could check their knowledge and track their progress before and after practice. In this case, and in order

not to interfere with this study, the students had access to all the results only after they had completed the whole process. Example 1 shows one of the questions in the test:

*Example 1:*

*Choose the option that, in your opinion, best describes the notion of “acceptance” in Acceptance and Commitment Therapy (ACT):*

- a. *Acceptance of what is beyond your control or what you cannot change. Accepting this allows you to move forward by working with what you have*
- b. *Acceptance of things you cannot control (e.g. how you react, think or feel right now), so that you can move forward by focusing on other aspects of your personality*
- c. *Acceptance of life difficulties that you cannot change, so that you can learn to cope with them through avoidance strategies*

To gauge students’ general impressions regarding their perceived interest and usefulness of the task, a questionnaire including the ‘Interest/Enjoyment’ and the ‘Value/Usefulness’ subscales of the Intrinsic Motivation Inventory (IMI) (Self-Determination Theory, SDT, [n.d.](#); Deci & Ryan, 2008; Ryan & Deci, 2000a, b) was created.<sup>5</sup> The IMI is a multidimensional assessment instrument that measures motivational structures organized in seven subscales including the interest/enjoyment and value/usefulness subscales. Recent COVID-19 research related to online and EFL learning suggests that the students’ motivation plays an important role, especially if learning is supported by digital tools since it encouraged students to learn on a more individual basis (McCullum, [this volume](#); Robbins & Masats, [this volume](#)). The interest/enjoyment subscale is considered the main self-report measure of intrinsic motivation in the inventory (SDT, [n.d.](#)) that takes into account the students’ experienced interest and perceived enjoyment when performing a specific task. The value/usefulness subscale gauges the perceived benefits of doing the task for the participant. Participants are asked to rate each statement indicating how true they are for them using a 1–7 Likert scale in which the lowest value is “1-Not at all true” and the highest value is “7-Very true”. The IMI is designed to be used as a whole or as a choice of dimensions/subscales. We used the interest/enjoyment and value/usefulness dimensions for the purposes of this study since previous research (Girón-García & Silvestre-López, 2019, [in review](#)) points toward these two dimensions as relevant components in tasks like the ones used in the pedagogical treatment of the present study.

### 2.3 *Pedagogical Treatment*

‘English for Psychologists’ is a compulsory ESP course in the first year of the Psychology Bachelor’s Degree. By the end of this course, students are expected to reach learning outcomes like developing autonomous learning skills, an instrumental command of the FL, and the ability to appropriately understand and handle specialized materials related to the field of psychology. This course provides students with

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<sup>5</sup>The questionnaire, including these subscales, is available online at <https://selfdeterminationtheory.org/intrinsic-motivation-inventory/>

the opportunity to use specialized English vocabulary by addressing the contents of a selection of psychology topics. This is expected to help them to autonomously manage specialized English in other degree courses and their professional careers.

For the purposes of this study, we designed two equivalent online tasks (Lesson/asynchronous and teacher-guided/synchronous) for each group of students to complete in up to 2.5 h. The tasks are conceived as an introduction to one of the units in the syllabus devoted to psychological therapies and require the search of information to promote specialized content understanding. To complete the tasks, students need to read and listen to authentic psychology materials in English through the proposed online resources. Concretely, in the tasks, students are required to use the English language for gathering, examining, selecting, using, and transforming information related to different kinds of psychotherapy. In so doing, the tasks are expected to help students to: (i) use the English language to learn about new types of therapy, (ii) use the internet as an instrument to fulfil particular needs according to the task objectives, and (iii) use a selection of resources provided by the teacher to build new knowledge in order to answer the activities proposed.

The asynchronous task is a Lesson in the Moodle LMS designed to introduce students, in one up to 2.5 h session, to the field of psychotherapy through the exploration of a set of online resources presented in an orderly way. Specifically, this Lesson is structured in five sections: (1) A general introduction to psychotherapy; (2) Cognitive-Behavioural Therapy (CBT); (3) Mindfulness-Based Cognitive Therapy (MBCT); (4) Acceptance and Commitment Therapy (ACT); and (5) Humanistic therapies. Each section introduces several questions targeting basic notions of each therapy that students need to answer using a selection of links to specialized online videos and texts. To answer the questions, the students are required to follow a simple, linear navigational path determined by the Lesson structure. In each Lesson section, the students are encouraged to explore, in any order, the resources provided to find, select, and transform information. For example, in Sect. 1, for each type of therapy, the students need to gather relevant information and deconstruct it to briefly describe aims, types of disorders, techniques, and examples of patient cases. In the rest of the sections, the students need to browse the resources to describe more detailed examples of applications of each therapy (see [Appendix A](#)). The Lesson is thus devised to encourage students to become the first-person agents of their own learning process while guiding them in the self-discovery of each type of therapy.

The synchronous online task deals with exactly the same topic, contents, and sections of the Lesson, but it is adapted to be implemented during one synchronous Google Meet session guided by the teacher. For this purpose, the Lesson contents are replicated and adapted to an MSWord format to be distributed to the students. The materials are thus structured following the same five-section format. During the implementation, the teacher acts as a guide, distributing the document via the Moodle platform, introducing the task, and then setting the pace of the session in line with what is required in each of the five sections. In doing so, the teacher ensures that all parts are covered. For each of them, the students are requested to answer the questions by checking exactly the same selection of links as in the

Lesson. They are allowed to ask questions naturally (as in a regular live online class). The teacher clarifies procedural doubts when necessary (e.g., questions on how to proceed or how questions should be answered). When asked about conceptual doubts, the teacher prompts the students to use the link contents but does not give any clues about where to find a particular answer or what information is more relevant.

## ***2.4 Data Collection and Analysis***

We adopted a quasi-experimental three-group design (one control and two experimental groups). Pre/post-test measures were administered to the three groups to address RQ1 (task achievement in terms of understanding of contents). A post-task perception questionnaire was administered to the experimental groups to answer RQ2 (task perception in terms of the interest/enjoyment and value/usefulness dimensions).

Firstly, all students took the English level placement test. The study was implemented as part of the contents of the course, so all the students taking the study were allowed to take part in any of the three groups. However, only B1 students who volunteered to participate were eventually considered for the final sample in this study (see Sect. 2.1). Three weeks before the pedagogical treatment, students were informed of the study and its expected time frame in the course. Due to individual circumstances during confinement, not all students were available to connect synchronously to the online class sessions. Therefore, they were informed that, in order to participate, they would have to be online without being interrupted during one single session lasting up to 2.5 h. They could choose to do this either synchronously in one online Google Meet session during class time or by doing an asynchronous online task outside class time, but also within a single session of up to 2.5 h. All volunteers signed an informed consent form and took a pre-test (task achievement test) two weeks before the pedagogical treatment. Those who expressed availability for the asynchronous session were included in experimental group 1, the rest were distributed into experimental group 2 and the control group.

Experimental group 1 performed the asynchronous online task (Lesson). To do so, participants were granted a 48-h period in which they had to start and finish the Lesson and then complete the post-test (task achievement test) and the task-perception questionnaire immediately afterwards. They were given a 2.5-h time limit from the moment they started the Lesson. Submission times were checked in Moodle to ensure these conditions were met by all participants. Experimental group 2 attended a 2.5-h online session in which they carried out and completed the synchronous online task. During the session, the students could interact with the teacher as described above but could not talk to other students. Upon task completion, they took the post-test (task achievement test) and answered the task perception questionnaire. The control group attended a 2.5-h live online session in which, following the structure of a regular live online class, they addressed unrelated contents and were then administered the post-test (task-achievement test).

Once all tasks and tests had been completed, data were collected and analyzed. Normality of the data was checked with the Shapiro-Wilk test. Pearson chi-squared test was used to check for sex differences, and one-way ANOVAs were used to test potential age and previous knowledge (pre-test scores) differences between groups. In order to answer the first research question (RQ1), a repeated-measures ANOVA with a Tukey post-hoc test was used. To answer the second research question (RQ2), the internal reliability of the interest/enjoyment and value/usefulness subscales was checked (Cronbach's  $\alpha = .917$  and  $= .915$  respectively). Independent samples t-Tests were run to unveil potential differences regarding interest/enjoyment and value/usefulness between the two experimental groups. The effect size was calculated with Cohen's *d*.

### 3 Results and Discussion

The Shapiro-Wilk test indicated that the data presented a normal distribution (Control,  $p = .056$ ; Experimental 1,  $p = .226$ ; Experimental 2,  $p = .228$ ). The sample distribution had a bias in sex, as 86.8% ( $N = 99$ ) were women and 13.2% ( $N = 15$ ) were men, but this distribution is the norm in this bachelor's degree; nonetheless, there were no significant sex differences between groups (see Table 1). The one-way ANOVAs run to test age and previous knowledge on the topic (pre-test measure) indicated that there were no significant differences regarding age (average age: 18.92 years,  $SD = 2.88$ ) or topic-related knowledge between groups (pre-test  $M = 9.65$ ,  $SD = 1.7$ ).

The first research question (RQ1) explored the effectiveness of each pedagogical treatment in terms of potential changes in participants' knowledge about the contents dealt with in the tasks measured through pre/post-test scores. A repeated-measures ANOVA was run to evaluate the time by group interaction (Table 2) revealing statistically significant effects of instruction (Wilks'  $\lambda = 0.573$ ,  $F(2.111) = 41.427$ ,  $p = 0.000$ ), with a moderate size effect ( $\eta_p^2 = 0.427$ ).

In order to reveal the particular differences between groups, a Tukey post hoc analysis was performed. The comparison displayed significant differences between the control group and the two experimental groups. The differences between the experimental groups, however, were not statistically significant (see Table 3).

Overall, these results indicate a positive and significant effect of instruction in both experimental groups. This implies that both the synchronous and asynchronous

**Table 1** General group characteristics: Sex, age, and previous knowledge

	Control	Experimental 1	Experimental 2	<i>Sig.</i>
Sex (Women), N (%)	31 (86.1)	35 (87.5)	33 (86.8)	.984
Age, M (SD)	18.47 (1.18)	18.93 (2.7)	19.34 (4.02)	.434
Pre-test, M (SD)	9.86 (1.71)	9.53 (1.71)	9.86 (1.71)	.661



**Table 2** Effects of instruction: Descriptive statistics and Wilks' Lambda

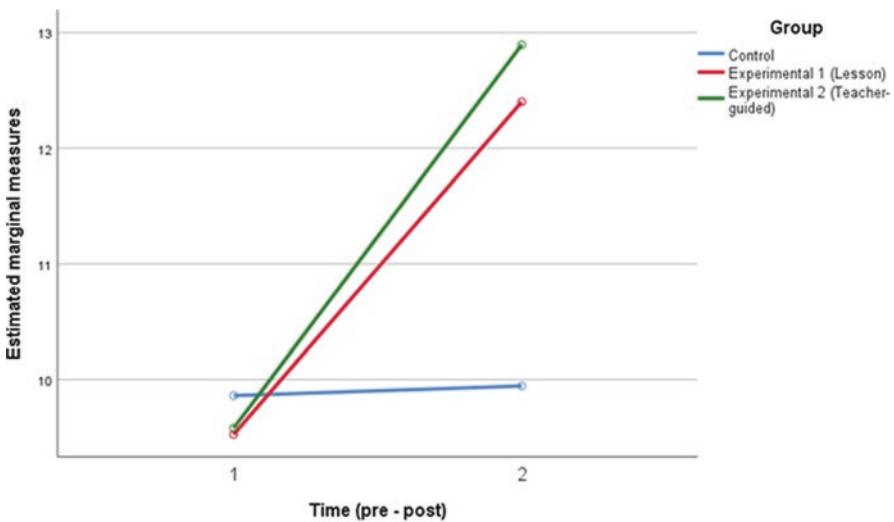
Control		Experimental 1		Experimental 2		Wilks' $\lambda$	F	p	$\eta_p^2$
Pre	Post	Pre	Post	Pre	Post				
9.86 (1.71)	9.94 (1.98)	9.53 (1.71)	12.4 (2.13)	9.58 (1.7)	12.89 (1.89)	.573	41.427	<.000**	.427

Note. Time\*group effects are reported/Significance: \*\* P < .001

**Table 3** Effects of instruction: Tukey post hoc comparison between groups

Group	Group	Tukey p
Control	Experimental 1	.018*
	Experimental 2	.002*
Experimental 1	Experimental 2	.749

\*Significance:  $p \leq .05$



**Fig. 2** Pre-post change in each group

pedagogical alternatives are to a certain extent equivalent. Figure 2 offers a visual representation of the pre/post-test evolution of each group.

The evolution of the teacher-guided instruction group is slightly better than the evolution of the group that worked asynchronously with the Lesson. This could lead to the subjective interpretation that teacher-guided instruction may result in better performance. While this is true at the level of absolute values, the difference is not statistically significant, which implies that both types of treatment are appropriate to promote content learning, at least regarding students' achievement. These findings are in line with the results from a recent study dealing with Cybertask-based content instruction in higher education, which suggest that this kind of instruction is useful

**Table 4** T-test results (Experimental groups 1 and 2)

IMI Dimension	t-Test for equality of means				Cohen's d
	t	DF	Sig.	Mean difference	
Interest/enjoyment	4.895	58.450	.000	7.90658	1.1163227
Value/usefulness	4.243	70.019	.000	5.79737	0.96434166

to promote content learning (cf. Girón-García & Boghiu-Balaur, 2021) in asynchronous online contexts.

The second research question (RQ2) in the study addressed the way each online task was perceived by students regarding task interest and usefulness, for which two independent samples t-Tests were run on the IMI interest/enjoyment and value/usefulness subscales. The results of each t-Test indicate that the asynchronous task (i.e., the Lesson administered to Experimental group 1) was perceived better, overall, in terms of interest-enjoyment (Experimental 1: M 36.28, SD 4.99; Experimental 2: M 28.37, SD 8.69) and value-usefulness (Experimental 1: M 35.35, SD 5.24; Experimental 2: M 29.55, SD 6.70), with significant differences when compared to the synchronous teacher-guided treatment administered to Experimental group 2 (see Table 4). Interest/enjoyment ratings for the asynchronous Lesson treatment are 7.9 points higher than those for the synchronous teacher-guided treatment. This difference is significant  $t(5.45) = 4.895$ ,  $p < .001$ . Value-usefulness ratings for the Lesson-based treatment are 5.8 points higher than those for the teacher-guided alternative, also with significant differences  $t(70.019) = 4.243$ ,  $p < .001$ . A large effect was found for both dimensions, with a Cohen's  $d$  of 1.116 for interest/enjoyment and 0.964 for value/usefulness ( $d > .8$  in both cases).

Although both online task formats are equivalent in terms of content and displayed similar achievement rates, the Lesson-based online task was perceived as more motivating in the sense that students reported better-perceived enjoyment and interest levels while doing it. Likewise, it was perceived as more valuable and useful. The difference in terms of interest/enjoyment rates could be expected to a certain extent, since the outcomes of previous studies report positive perceptions of online asynchronous learning tasks (Cf., for example, Kim et al., 2019; Bond et al., 2020). However, in the absence of previous studies conducted under similar circumstances, the origin of the significant differences regarding the perceived usefulness of the task is more difficult to ascertain. Perhaps the better scores of the asynchronous task in this IMI dimension have come about due to the greater degree of autonomy and freedom to complete the task. In that task, participants have been able to direct their attention to the resources that they felt were most relevant or appealing (Cf. Levitt & Piro, 2016). Additionally, they may have been able to optimize the time they spent browsing the resources to gather and transform the information they found most convenient to complete the task at their own pace (Cf. Girón-García, 2013). This may have led them to perceive that they have taken control of the task completion process, creating more meaningful navigation paths and thus enriching their information search experience. In turn, this may have contributed to making them perceive the task as particularly useful and valuable. The

possibility of using the resources at their own convenience to answer the task questions connects with the notions of enhanced self-control of the students' own learning process and the creation of meaningful navigation paths. Since these key features of successful autonomous learning are also present in Cybertasks (Cf. Girón-García, 2013), the perception results obtained in this study could be indicative of a successful adaptation of the Cybertask model to the Moodle environment. Nevertheless, more studies are necessary to determine the conditions under which this kind of adaptation may be more effective. Concretely, it would be desirable to explore its effectiveness in relation to the role of learning autonomy, potentially different classroom contexts, or students' preferences for synchronous and asynchronous online tasks.

Finally, it is interesting to point out that the large size effects findings suggest that these differences in perception may have real practical significance and can be expected to hold if both online task formats are used in the future in similar circumstances. It is likely that the same would happen in a regular (lockdown-free) context, but this is something that further studies should address. These data should thus be interpreted with caution, as the extremely exceptional circumstances in which the study was conducted may have exerted some influence on the students' perceptions.

## 4 Conclusions, Limitations, and Further Research

This paper has illustrated a case of adaptation to the "online mode" in the framework of the COVID-19 crisis in a Spanish higher education ESP course taught to first-year psychology degree students. Specifically, it has attempted to survey the pedagogical potential and the students' perceptions of two equivalent online tasks in an asynchronous Moodle Lesson format and in a synchronous live Google Meet session guided by the teacher.

The first research question addressed the potential effectiveness of either pedagogical alternative to deal with task-related content in the FL. Both pedagogical alternatives were found to be similarly effective to help students to deal with content and individual work with online resources in this classroom context, with significant differences compared to the group that did not receive such instruction. Beyond pedagogical potential, the results obtained imply that both the synchronous and asynchronous alternatives can be implemented interchangeably. In terms of achievement, the asynchronous system works at least as well as the teacher-guided system. This has direct applications not only in terms of course planning, but also because it offers the possibility of adapting to the idiosyncratic needs of the students or the social and contextual circumstances in a near future (e.g., health issues, imposed lockdown, etc.).

Regarding the second research question, the group that performed the Lesson-based asynchronous task showed statistically significant better task perception scores in the IMI dimensions tackled in the study. These findings suggest students' perceptions are sensitive to that distinction, which underscores the need to further

investigate potential differences between synchronous and asynchronous “online learning modes”, particularly regarding the way students perceive each modality. As the widespread technological adaptation universities experienced during the COVID-19 crisis is likely to take hold, it might be interesting to revisit the traditional conception of (often asynchronous) “online learning” in contrast with the new realities that emerged during this period. For example, it may be worth analyzing the extent to which synchronous online “streaming” sessions are equivalent to “traditional” face-to-face classes. More studies should also explore whether the former can still be regarded as online learning instances as prototypical as other asynchronous TBLT-based alternatives (like WebQuests or Cybertasks) that are more conventionally associated with the “traditional” conception of online learning.

This study has several limitations. First, it is a quasi-experimental study in the sense that the distribution of participants was not carried out in a completely randomized way because, in the context of lockdown, the circumstances were not suitable. The ideal scenario would have been to ask students to have online and offline availability as a precondition for participation (before proceeding to a fully random assignment to one of the three groups). However, in order to increase participation, we preferred to prioritize the real availability of all participants (as not all of them had such availability) and let them choose a synchronous or asynchronous session, depending on their personal circumstances. Once they had made their choice, the students were distributed into the asynchronous (Experimental 1) or synchronous (Experimental 2 or Control) options, efforts being made to ensure that they were comparable in terms of gender composition. Further research must be carried out with an experimental design (fully randomized sample); in particular, it would be desirable to replicate this study in a future COVID-19/lockdown-free environment to explore any variation, especially in terms of task perception effects. In connection with this, the COVID-19 context in which the study was carried out can be perceived as a second limitation, as the context of the pandemic might have led to students’ having a different perception of the task and the experience in general. This circumstance must be taken into account when considering the outcomes reported in this study. A third limitation has to do with the pre/post-test measures used in the study design. The post-test measures were administered right after the pedagogical treatment, thus, the results regarding the effectiveness of the two pedagogical interventions must be interpreted as short-term effects.

This study provides new insights into how a specific group of ESP students responded to and perceived the two online alternatives during the spring 2020 lockdown, which casts new light on how both alternatives could be handled in similar situations in the future. This is certainly useful for the ESP course in which the study was conducted. Nevertheless, these results may also be interesting for other higher education ESP courses dealing with synchronous and asynchronous tasks following a similar approach. Moreover, the findings in this study also enhance our general understanding of the students’ perceptions regarding synchronous and asynchronous learning beyond the field of ESP.

All in all, while this study is to be regarded as a very specific case within the framework of a particular ESP course, its findings are encouraging. There is still a

need to further investigate the use of Cybertask-based Lessons for content learning in ESP. As a result, this work may inspire ESP teachers to develop similar tasks as a helpful adaptation to student and contextual needs in post-COVID-19 crisis times.

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## Appendix A: Lesson Sections Screenshots (Introduction and ACT)

### SECTION 1: Psychotherapy and different types of therapy

#### DESCRIPTION

Below you will find links to the description of basic types of therapy.

Browse them (you may read/watch all of them or only some of them) so that you become acquainted with some basic notions related to psychotherapy.

#### QUESTION 1

For each type of therapy, try to find some information concerning some of the following points (this will give you an idea of the basic details of each kind of therapy). If you think you need more information to complete the table, you can use the links provided in other sections.

- **Context and main aims** of the therapy. That is, where does it come from (e.g. is there a particular theoretical background/philosophy)? And, most importantly, what is it for?
- **Targets/conditions** (kinds of disorders or problems it is useful for, types of a patient if needed)
- **Techniques** (how do professionals proceed?)
- **Examples** (e.g. particular cases of patients and how that therapy helped them)

	AIMS	TARGETS	TECHNIQUES	EXAMPLES
CBT				
MBCT				
ACT				
Humanistic-related therapies				

#### Psychotherapy and different types of therapy (general descriptive links)

- What is Psychotherapy? <https://www.verywell.com/psychotherapy-4014033>
- What is Psychotherapy and how does it help? <https://psychocentral.com/psychotherapy/>
- The Basic Methods of Different Therapy Types: <https://www.verywell.com/types-of-therapy-2795753>

**TIP:** You can copy this table and paste it below in order to answer the question by editing it.

Su respuesta

1 A B I ↵ ↶ ☰ ☰ 🔗 🔄 🌐 📷 📄 📌 🖨 H-P

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### SECTION 4: Acceptance & Commitment (ACT)

#### DESCRIPTION

In this section, you will find different resources (web links) related to ACT. Surf these links to answer the questions proposed.

#### QUESTIONS

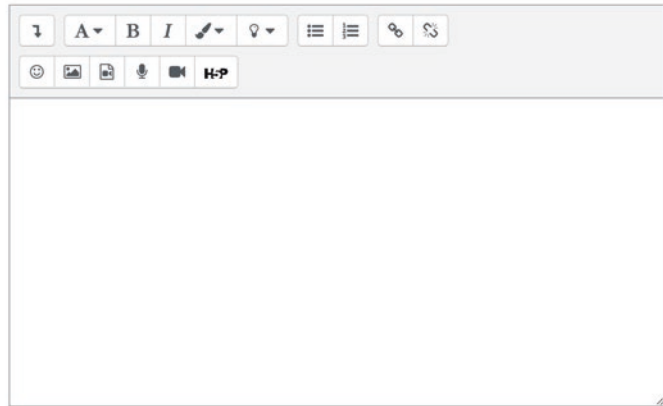
**(Q4.1):** What does 'ACT' refer to? Describe the basics of this type of therapy.

**(Q4.2):** Could you give an example of an application of ACT?

- An Overview of Acceptance and Commitment Therapy: <https://www.psychotherapy.net/article/Acceptance-and-Commitment-Therapy-ACT#section-what-is-unique-to-act>
- ACT Mindfully: <https://www.actmindfully.com.au/about-act/>
- The ABCs of ACT — Acceptance and Commitment Therapy: <https://www.socialworktoday.com/archive/090208p36.shtml>
- Acceptance and Commitment Therapy (ACT) - The Walls [https://www.youtube.com/watch?v=Tz4w0xrQfWI&ab\\_channel=LindaWolfus](https://www.youtube.com/watch?v=Tz4w0xrQfWI&ab_channel=LindaWolfus)
- What is Acceptance Commitment Therapy? [https://www.youtube.com/watch?v=ScwXgqQ\\_d7Y](https://www.youtube.com/watch?v=ScwXgqQ_d7Y)

**TIP:** In order to answer the questions in an orderly way, copy and paste the questions in the space provided below and write your answers.

Su respuesta



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# Developing Speaking Proficiency in Online Courses Through Tabletop Role-Playing Games



Robb Mark McCollum

**Abstract** Games can be an effective tool in the language-learning classroom to motivate learners, to build rapport, and especially to encourage learners to practice the target language. This chapter explores the types of games used in language instruction, describes the linguistic and communicative benefits of game play, and highlights some potential problems with the use of games for language learning. The author offers recommendations on how game-based approaches to language learning can be adapted to online English language teaching and learning contexts such that they draw from the benefits of games and avoid the potential pitfalls. The author then details an investigation comparing tabletop role-playing games (TTRPGs) with Intermediate and Advanced level speaking functions of the American Council for the Teaching of Foreign Languages (ACTFL) proficiency guidelines. The author explains how TTRPGs can be adapted to online language learning contexts to help learners practice target ACTFL speaking functions.

**Keywords** Game-based learning · Task-based language teaching · Role-playing · Speaking · Tabletop games

## 1 Games and their Use in Language Learning

Motivation in the language classroom is often a concern, which is amplified in an online environment where interaction and friendship between students can be more challenging given the lack of physical proximity between participants. This paper is divided into two parts. The first part offers an overview of potential of games for language learning and ends with an examination of the potential of tabletop role-playing games (TTRPGs) as a tool for increasing student motivation and fostering

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language development in online courses. Not only do games, such as TTRPGs, motivate learners to participate in class discussions, but also TTRPGs are ideally designed to help learners develop oral fluency. The second part of this paper investigates the degree to which the common tasks of TTRPGs align with the speaking functions of the Intermediate and Advanced levels of the American Council for the Teaching of Foreign Languages (ACTFL) Guidelines (2012). By aligning TTRPG gameplay with ACTFL oral proficiency functions, teachers can design curricula that help online language learners engage in motivating group discussions that improve learners' speaking skills.

### ***1.1 Games as a Tool for Building Motivation***

Language learning can be a challenging endeavor. It requires a great deal of practice with the language, and learners need to feel comfortable and confident enough to experiment with speaking and writing in the language knowing that they will inevitably make mistakes as they work towards improved proficiency. As a result, language teachers face many challenges motivating their students to practice the language sufficiently so that learners will develop the target proficiency. The use of games for language learning can be one effective way to help learners overcome their inhibitions and lack of motivation so that they spend time exercising their language skills in a fun and meaningful way. This study examines the role of games in the language-learning classroom—both in-person and online, and discusses various levels of game use in the curriculum. An analysis of both the benefits and potential pitfalls of gaming are examined along with general suggestions for integrating games into the language classroom. Following this examination, I explain how a specific type of game, tabletop role-playing games (TTRPGs) can be adapted to online language learning contexts and how TTRPGs can help online learners develop proficiency in the functions of Intermediate and Advanced levels of the ACTFL Guidelines.

Feeling motivated and confident to practice the target language is an important psychological component to successful language learning. Goldman and Chen (2013) explored the role of motivation in relation to an interactive computer game that was built to help native Portuguese players learn and practice the target language of English. In this game, players were presented with a series of pirate-themed quests, presented to players by an in-game character. Using listening and reading input, players had to use clues to navigate the virtual environment and solve the quests. The game provided many opportunities for students to practice reading and listening skills while learning new vocabulary and grammar implicitly. The researchers concluded that in addition the linguistic benefits of the game, players developed “a burgeoning sense of competence and confidence that comes with the knowledge that they can teach themselves” (p. 407). According to Goldman and Chen, players discovered that language learning can be fun and motivating when contextualized into an experience, such as a game. Butler et al. (2014) report similar

findings that games can help language learners focus their attention on the target language, thereby increasing both their motivation and confidence to learn.

## ***1.2 Games as a Tool for Developing Linguistic and Communicative Skills***

Of course, games do not only increase motivation and confidence in language learning. Numerous studies have shown that games can help learners improve their linguistic skills, as well. For example, Bado and Franklin (2014) report that cooperative gaming helped learners improve their vocabulary and writing skills, Kaylor (2017) states that collaborative storytelling games encouraged teens to improve their literacy skills, and Cornillie et al. (2012) found that a computer game that offered language accuracy feedback helped players pay attention to and learn grammatical forms. In his experimental study involving Croatian learners of English who played role-playing games in the target language, Farkas (2018) found a significant difference in the improvement of the experimental group's listening and speaking skills compared with the control group. These are just a handful of studies, from a large body of emerging research, that build an argument that games are useful for helping learners improve their language proficiency.

In addition to helping learners develop linguistic skills, studies suggest that games also help with communication skills. In his account of teaching English in Korea, Seller (2012) describes how the use of role-playing games with his students helped them develop empathy, collaboration, and decision-making skills. Likewise, Daniau (2016) claims that role-playing games enhance the learning environment through cooperation, empathy, and negotiation. Daniau also purports that, because games require players to come to a consensus about rules and purpose, they help create a sense of community and belonging; players use the game structure to develop creativity skills, communication skills, and explore different identities that help learners develop empathy. As such, Daniau suggests that games can become a transformative experience for players, helping them become stronger and better communicators.

## ***1.3 Types of Games for Language Learning***

It is clear that there are many benefits to games and that they can contribute to better language learning and stronger language learners. Yet gaming takes many forms, and not all forms of games are equal. Games for language learning can be categorized into three forms of integration: games in the classroom, game-based learning, and gamification. Because there are no absolute criteria to separate each concept, it

is more helpful to think of these categories as anchor points on a continuum rather than as strict distinctions.

**Games in the Classroom** The first category, games in the classroom, involves using games to make learning more interesting. In such contexts, a game is used to break up the monotony of language teaching and learning. Of course, such games should have a pedagogical function, and they are most effective when they relate the language tasks and forms that learners are already practicing. However, they are usually optional and non-essential to the curriculum. In their edited collection of language games, Nurmukhamedov and Sadler (2020) state that most games in language learning “enrich classrooms” (p. ix). The use of *enrich* is indicative of the role of games in this first category; they are supplemental and mostly used to lighten the learning atmosphere and give students and teachers a break from “normal” classroom learning. This level of game integration is the easiest to align with a curriculum and requires the least planning.

One example of a game in the classroom is the use of a spelling game. As part of the regular course curriculum, teachers may introduce new words to their students who are expected to study and learn these words on their own after a basic introduction to the vocabulary in a class lesson. However, teachers could use a game to supplement students’ learning of the target words. A simple spelling game would involve splitting the class into teams, and each team has a rotating representative who is responsible for correctly and quickly spelling whichever word the teacher announces. The team whose representative correctly spells the word first wins a point. Although this type of game is engaging for many students and is relevant to the language that the students are learning, it is not an essential component of the curriculum.

Another example of a game in the classroom is an information gap game. As part of the course curriculum, students may be learning to ask simple Yes/No questions. To help students practice this skill, instructors might use an information gap activity using cards containing images of vocabulary words that students have already learned in the target language. In this game, students work in pairs to identify the image contained on their partner’s card. The student without the card asks a series of Yes/No questions, such as, “Is it an animal?” The partner with the card answers accordingly, and once the mystery image is correctly guessed, partners swap roles. For a more competitive game, student pairs could race to see which partnership completes their assigned stack of cards before the other groups. As with the spelling game, this information gap game is not an integral component to the lesson. Instead, it is an optional and engaging activity that both motivates learners and helps them practice the linguistic objectives of the curriculum. These are key features of games in the classroom: fun and supplemental but definitely non-essential.

**Game-Based Learning** The second category of integration is game-based learning. At this level, games become the primary tool for learning, rather than a supplemental diversion. Some researchers refer to this category as serious games because they are games with a clear purpose beyond simple enjoyment and that learners

develop transferable skills that help them outside of the gaming context. Game-based learning also differs from games in the classroom because these games often require greater integration into the curriculum and more preparation on the part of the instructor. McGonigal (2010) offers an example of game-based learning, or serious games, through her game *Superstruct*, in which players use real data to collaborate on solving a global resource scarcity scenario. Game-based learning requires instructors to carefully select games, or even create them, so that the gameplay relates directly to the course learning outcomes. Such games are integral to the learning experience and are not an occasional diversion but rather a core component of the learning experience. When students are engaged in game-based learning, playing the game is the learning experience; the game may be the primary method for teaching and learning the course content, and, in a language course, the game may be the primary tool that allows learners to meet the course outcomes, such as listening, speaking, reading, and writing.

In game-based learning, a game is far more integrated into the teaching and learning experience than it is with the games in the classroom category (deHaan, 2011). For example, a language course could have some pragmatics-based outcomes that focus on levels of politeness and appropriateness in email interactions. To help students develop proficiency in these outcomes, students could be asked to participate in a simulation in which they write (or select pre-written) email messages to send to imagined interlocutors. Based on their choice of email compositions, students could earn points and receive particular responses to their messages. At the end of the simulation, students would evaluate their effectiveness based on their total points or based on the final outcome of their email exchanges. To further extend the value of the game, the course instructor might review choices with students to help them evaluate their choices and predict the impact of those choices on the interlocutor. This simulation game is more elaborate than a game in the classroom. The simulation requires more time and preparation than a simple game, and it is more closely tailored to the course outcomes. And not only does the action of playing the game support the course outcomes, but many of the outcomes would be difficult for students to achieve without the game. These are defining elements common to game-based learning: the integration of outcomes and gameplay are much closer, and playing the game is an important part of the lesson or curriculum. Often, game-based learning involves a game that is not completed in one session, but rather it is a repeated or complex game that extends across classroom meetings.

**Gamification** The final category is gamification, which refers to the use of game-like elements in a non-game context (Marczewski, 2015). For example, many corporate marketing campaigns use gamification strategies to entice consumers to share posts on social media to be rewarded with game points, or users of a fitness app may earn badges for completing certain exercise goals. The idea of gamification is that gaming elements can be added to a non-gaming context to make the experience more motivating to participants. Gamification can also help guide users towards meaningful goals. In this way, language education can be gamified.

Critics warn against gamification for a couple reasons. First, gamification strategies may be applied in a superficial or misaligned manner, thus distracting from the learning outcomes rather than complementing them. This most often happens when creators decide to gamify an experience without a careful consideration of the learning goals and which gaming elements are best suited to the participants, the content, and the learning outcomes. Second, gamification can be used to make an experience enticing to players even when that experience is not in the best interest of the players or possibly even at the expense of players. For an example of this, consider the previously mentioned gamified marketing campaign. What benefit (beyond game points) do players get from sharing social media posts from a corporation's marketing team? And what detriment might such a game pose to players if the gamification system requires them to share personal data with the corporation?

With these warnings in mind, if gamification is used for language learning, creators need to ensure that the gaming elements contribute to the learning goals and that the game is ethical and beneficial to learners. For example, one common gamification element is the use of leaderboards, a list or chart that shows which players are excelling in a game according to a ranked list of all participants. Although some students are highly competitive and enjoy the challenge of a leaderboard, other learners are turned off by such competition and may even refuse to play a game that is tied to a leaderboard. Some players may be demotivated to practice the language if they are competitive but not successful at climbing the leaderboard. In such a situation, the gamification element could become more important to students than the learning objective, and gamification could supplant learning and replace internal motivation with an external reward.

Badges are another form of gamification. A badge is a microcredential, or evidence of an achievement, in a particular skill or disposition (Homer et al., 2018). Badges are popular in some educational contexts in which learners who complete a series of related objectives earn a badge to show their competency in the target domain. Although the concept of a physical badge is a long-standing tradition in many youth programs, such as scouting, educators have adopted badges as a means of motivating learners in the classroom. When a badge is tied to a curricular outcome, the process of completing badge requirements can help students attain course objectives (Ady et al., 2015). A badge system can be a helpful gamification component to a course because it provides choice and short-term goals for students (Boyer, 2018). However, just as with leaderboards and other gamification elements, instructors need to choose and integrate badges carefully so that they are appealing to students and appropriate for the course's outcomes (Hirvela & Pierson, 2000). Gamification is less about using a game to practice learning outcomes and more about turning the classroom into a game by using a variety of game-like elements to motivate learners to engage in course materials and objectives.



## ***1.4 Criticism of Games for Language Learning***

Even if games are used in an ethical and purposeful manner, not all instructors are convinced that games for language learning is a fruitful pursuit. In his survey of foreign language faculty in Japan, Franciosi (2016) found that many faculty were skeptical of the contributions that games could make on students' proficiency. Faculty also believed that the effort required to facilitate gameplay was not worth any potential benefits. Farkas (2018) agrees that faculty need to evaluate the time cost-benefit of introducing games into classroom learning; if a game is rich in language and can be easily taught or learned, then its utility as a language-learning tool is far greater than a fun but mostly irrelevant game. Moffitt (2016) reports that despite the motivational value of incorporating games into the classroom, the language learning benefits may be modest, depending on the game structure. This criticism is shared by deHaan (2005) who argues that many games require little use of language and cannot be considered a valuable resource for classroom language teaching nor as an effective tool for independent language learning.

Recognizing that games for language learning can have remarkable benefits as well as potential problems, educators should be judicious in their choice of games and how well they relate to curricular goals. The following advice may be helpful. First, games should be selected for their language learning potential. Games that require appropriate amounts of reading, writing, listening, or speaking are ideal, as are games that focus players' attention on grammar or vocabulary forms (deHaan, 2005). Second, as Farkas (2018) points out, not all games appeal to all players, so instructors should look for games that have themes that are most likely to appeal to their students. Third, games should match both the course outcomes as well as the proficiency level of the learners; games that do not match the course objectives will waste class time and games that do not match learners' ability range will be frustrating. Fourth, instructors should consider the amount of preparation required for a successful gaming experience; games that require copious preparation on the part of instructors or students may not yield adequate linguistic and motivational benefits to justify their use (Franciosi, 2016). If these points of advice are heeded, instructors and learners are far more likely to have a fruitful and enjoyable experience with games in the language learning classroom.

Games for language learning encompass not only a variety of games but also a range of curricular integration including supplemental activities, deeper games that are core to curricular goals, and gamification elements that transform the learning experience into a game. If language learning games are carefully and thoughtfully selected, they can improve learner motivation, linguistic proficiency, and interpersonal communication skills. As such, games can greatly enhance the language learning experience.

## ***1.5 Adapting Games for Online Language Learning***

Games have long played a role in language learning classrooms, and as language learning expands into online contexts, teachers should consider the impact that online environments have on games. First, physical game components, such as cards and dice, will need to be replaced with virtual components. In many ways, this is one benefit of online environments since an unlimited number of students can play with digital materials so long as enough devices can access the appropriate website or app with the virtual replacements (Arnseth, 2006; Nicholson, 2010).

Second, the online classroom frees students from a physical gathering place, so students can form gaming groups with classmates from any location, including those who live in different countries or time zones (Nicholson, 2010). However, because students living in widely separated time zones may not be available to participate in live games at the same time, teachers should consider games that can be played asynchronously. In asynchronous games, a player takes a turn and then waits for all other participants to contribute to the game before taking the next turn; as a result, an asynchronous game could take days to complete if each player only makes one or two moves per day. The ability to play asynchronously may be an advantage for certain games, and the possibility of collaborating with classmates from around the world can add to the diversity of the classroom and to the richness of the gaming experience.

Third, due to the nature of online environments, players may be able to obscure their identities from one another. This could be advantageous for certain games, but if clear identities are important, teachers should consider organizing games through the course's learning management system or asking students to ensure that they identify themselves clearly to other game participants in live video conference meeting rooms or other platforms.

Fourth, online gaming may provide an advantage for teachers to monitor small group interactions and offer feedback to players. For example, if students play a live game via a video conferencing breakout room, an instructor may be able to drop into the meeting room temporarily to answer questions or observe gameplay before visiting another group. Other gaming platforms, including many platforms for asynchronous gameplay, keep a record of each player's actions so that a teacher could review the students' participation in the game. The nature of online gaming can facilitate a teacher's ability to monitor and interact with players (deHaan, 2005).

## ***1.6 Tabletop Role-Playing Games in Online Language Learning Contexts***

Recognizing that games for language learning can have remarkable benefits as well as potential problems, educators should be judicious in their choice of games and how well they relate to course and program curricular goals. Instructors should

select games that offer plenty of linguistic development (deHaan, 2005; Moffitt, 2016), target the proficiency level and interests of their learners (Farkas, 2018), and minimize instructor preparation (Franciosi, 2016). With this in mind, tabletop role-playing games (TTRPGs), such as *Dungeons and Dragons* (Mearls & Crawford, 2014) or *Kids on Brooms* (Gilmour et al., 2020), are a potential tool for online language learning.

TTRPGs fit under the wider umbrella of role-playing games (RPGs). In an RPG, a player assumes the role of a character that participates in a narrative (Bowman, 2010). The narrative is guided by a game master, a storyteller, who presents the players with challenges that their characters must overcome (Cover, 2010). The TTRPG label is used to distinguish this subset of RPGs from computerized RPGs, or CRPGs. In a CRPG, the position of game master is provided by the software, and a single player can engage in the narrative without interacting with other players. In contrast, TTRPGs typically involves a human game master and several players who work together as a team. TTRPG gameplay is a linguistically and socially interactive experience in which the game master and players gather around a physical table and manipulate game dice to simulate the randomized unpredictable outcomes of their characters' choices in the narrative.

Some TTRPGs are rules heavy, which means that the game master and players must carefully consult and learn the game rules to play the game correctly. For those who play these types of games, accuracy to the game ruleset is part of the game's enjoyment and challenge. For a game used in a language course, teachers may insist that students read and learn a complicated ruleset as part of the language learning experience. However, many teachers may prefer a rules light TTRPG for their course. A rules light TTRPG is one that focuses on player interaction and collaborative storytelling. Although there is a set of rules to guide gameplay in such a TTRPG, the rules can be quickly learned and strict adherence to the rules is not as important as having fun, communicating together, and building a shared narrative. Most language learning classes will probably want to use rules light TTRPGs or at least give players the freedom to flexibly adapt the rules of the selected TTRPG to suit their needs and interests.

Although TTRPGs are usually played in-person with a group of friends, technology has facilitated TTRPG play in online environments. Unlike CRPGs, which are also playable in online contexts, online TTRPGs are focused around player and game master interactions. In the early 2000s, virtual spaces, such as the *Second Life* platform, and asynchronous message boards were used by TTRPG players to connect online and provide an alternative to in-person TTRPG gatherings (Bowman, 2010; Cover, 2010). However, improvements in video technology and faster and more reliable internet connections have enabled TTRPG groups to share asynchronous video or to meet via video conferencing software that allows for live conversations. As such, online TTRPG gameplay offers many of the benefits of in-person gameplay with some additional advantages, such as the flexibility of asynchronous video recordings, as well as screen sharing and written chat options during synchronous video meetings.

As a result, instructors of online language courses have many useful tools to facilitate TTRPG gameplay for their students. The value of TTRPGs is not weakened by the online context. In fact, particular aspects of TTRPG play function even better in online environments and offer greater language learning opportunities, such as the ability of players to review classmates' interactions, the ability to share communication through both oral and written mediums, and the possibility of connecting players from multiple locations.

Some researchers (Farkas, 2018; Seller, 2012) have explored the use of TTRPGs for language learning and have found that such games are effective at motivating students, helping them develop interpersonal skills, and offering a context for language practice. Farkas (2018) suggests that the use of role-playing games (RPGs) in language courses is a prime example of game-based learning because:

...RPGs are, first and foremost, language dependent [...] everything that happens in an RPG must first be heard, then mentally processed, and then verbally expressed for the game to function. This means that the two base skills used in a language—listening and speaking, are the main tools players use to participate in the game. Additionally, because these games have no elements that can be rote learned and re-used to achieve success, the players need to constantly communicate in order to be successful. [...] As such, it lends itself to the idea that learning about the world, creatures, items, and events they encounter in this imaginary world is a crucial part of playing the game. If one can attach linguistic elements to the “success” parameters of the games, since learning is a significant part of the activity, it is possible to make language learning an integral part of the gameplay process and mechanics. (p. 25)

Farkas shares some important considerations for online language instructors. TTRPGs are excellent opportunities for practicing language because the entire gaming experience is created through oral (or written) communication; the game master and players must describe everything in the game, including all characters and environments. They also have to accurately describe the interactions that players encounter during gameplay, which often involves questioning to clarify details. The success of the game, regardless of whether the characters succeed in individual challenges as part of the narrative, depends on the players' ability to communicate well as a group in the target language.

Despite the many benefits of TTRPGs for language learners, little research exists on the relationship between TTRPG gameplay discussion and the oral language tasks representative of intermediate and advanced level language course outcomes. What follows is a brief account of a study that compares the common tasks in TTRPG gameplay with the speaking functions of the Intermediate and Advanced levels of the widely recognized American Council for the Teaching of Foreign Languages (ACTFL) Guidelines (ACTFL, 2012) and helps instructors of online language courses determine whether TTRPGs are a viable tool for their courses. The goal of this study is to provide evidence toward the linguistic justification for TTRPGs in the language classroom. The guiding research questions are (1) From a theoretical sense, how well does speech in TTRPG gameplay match the speaking functions of ACTFL Intermediate and Advanced levels? and (2) From a practical sense, do the speaking functions of ACTFL Intermediate and Advanced levels occur

in actual TTRPG sessions? By showing that TTRPG gameplay naturally targets the functions of Intermediate and Advanced level language, the argument for using TTRPGs in the online classroom is stronger.

## 2 Method

Exploring the relationship between Intermediate and Advanced level speaking functions of the ACTFL Guidelines (ACTFL, 2012) and TTRPG gameplay involves two steps: (1) a theoretical comparison of the essential ACTFL functions at these target levels with the common tasks in TTRPGs and (2) a practical investigation of actual language use during sample TTRPG gameplay by language learners.

The theoretical comparison was achieved by listing all of the ACTFL speaking functions for the relevant proficiency levels and attempting to associate each with a common task from TTRPG gameplay, where appropriate. The ACTFL speaking functions are found in the ACTFL Guidelines (ACTFL, 2012). The common tasks from TTRPG gameplay have been described, in its most basic terms, as “describe, decide, roll,” referring to the typical cycle of describing characters, locations, and situations, followed by a discussion of the players’ plan of action, and then a dice roll to determine the outcome (Maza & Barton, 2018). Other researchers have described TTRPG speaking tasks as describe people and places; ask questions, clarify, and request clarification; engage in dialogue, in-character, with other players; narrate actions; make plans, negotiate, and resolve problems (Bowman, 2010; Cover, 2010). To achieve the comparison, the ACTFL functions and the TTRPG speaking tasks were listed and compared to identify similarities between the uses of language in both lists.

The practical investigation of actual language use during TTRPG gameplay was accomplished using transcripts of TTRPG gameplay in an online English for Academic Purposes course. Participants for this study were recruited from pre-matriculated students in a university online intensive English program. All students were EFL learners from Peru studying online with a US university. Although both the students’ country and the host university’s country are nations that purportedly embrace multilingualism, particularly due to both indigenous and immigrant populations, both countries are heavily dominated by a single colonial language: Spanish in the case of the students’ home country and English in the case of the host university’s country. The host university had established its online intensive English program prior to the pandemic, but the widespread use of video conferencing software during the pandemic likely contributed to students’ comfort using online learning management systems and video conferencing software. All of the students in the study had used these technologies as part of their high school education during the pandemic. At the time of the study, the students were concurrently enrolled in their high school in Peru while completing the online intensive English program with the US university.

A group of six students in the Intermediate-High to Advanced-Low range on the ACTFL scale were recorded while playing a TTRPG during four sessions or a one-month period: game location description, player character description, rescue planning, and creature encounter. The first two sessions involved world building in which the students created and then described locations and characters at a fictional magic school where the TTRPG narrative would unfold. The third session required students to work as a group to develop a plan in response to a problem presented by the session's game master, the teaching assistant for the course. In the fourth session, students again worked as a team to generate a story describing their characters' response to a danger presented by the game master, this time played by the course instructor.

Data were collected from students' asynchronous individual speaking recordings (the first and second sessions) and synchronous small group recordings on video conferencing software (the third and fourth sessions). Recordings were transcribed to allow for a more detailed analysis of participants' speaking functions during game play. Examples of the ACTFL functions in these recordings were identified and compared with the list of TTRPG speaking tasks.

### 3 Results

The theoretical comparison of ACTFL functions at the Intermediate and Advanced levels with TTRPG common tasks shows a great deal of overlap. Table 1 lists the ACTFL functions on the left with TTRPG common tasks on the right. This suggests that all ACTFL Intermediate and Advanced level speaking tasks are likely to occur during typical TTRPG gameplay.

The practical investigation revealed that learners engaged in all of the TTRPG common tasks across the four sessions. As would be expected, learners described people and places during the location description and character description sessions

**Table 1** ACTFL speaking functions by level compared with TTRPG common tasks

ACTFL functions	TTRPG common tasks
<i>Intermediate level</i>	
Create with language	All tasks
Initiate, maintain, and end conversations	Engage in dialogue with other players
Offer simple descriptions	Describe people and places
Ask and respond to simple questions	Ask questions, clarify, and request clarification
<i>Advanced level</i>	
Offer detailed descriptions	Describe people and places
Narrate in present	Narrate actions (in the present)
Narrate in past	Narrate actions (in the past)
Narrate in future	Make plans
Resolve a complication	Negotiate and resolve problems

with some students' asking and answering of questions during those sessions, particularly for clarification purposes about the details that their classmates provided during the recorded descriptions. A couple students, who had slightly higher general oral proficiency than their classmates did, voluntarily included some past narration as part of their descriptions of locations and characters. For example, one student described the history of a secret room on the magical school campus, and another student related a short story about how his character decided to join the magical school.

The last two sessions, which were live meetings, were more interactive. The rescue planning session consisted mostly of making plans and negotiating; students brainstormed solutions to the problem presented by the game master and then questioned one another's ideas and refined and restated their plans until consensus was reached. At the end of the rescue planning session, the game master asked the players to summarize their plan of action, which again led students to restate, revise, and clarify their plan. The fourth session, which involved the characters facing a potentially dangerous creature and narrating how their characters felt, spoke, and acted during the scenario, involved all of the common TTRPG tasks: description, questions and clarification, dialogue, present and past narration, making plans, and negotiation and problem resolution.

As an example of gameplay during the fourth session, in one early round during this session, the first player stated that his character wanted to look deep into a cave. He rolled a high number on his rolling of a virtual twenty-sided dice, and since a high number suggests a success, the game master described, at the back of the cave, a dark shadowy that resembled the creature the characters had been searching for. The same player rolled again, with a high number, on an attempt to cast a spell that would see into the mind of the creature. The game master described a vision for the character, and the player announced that his character described the vision to the other players' characters. The players briefly discussed what their characters would do with that information, and then the second player took his turn by stating that his character would like to fly his broom to the back of the cave. However, the player rolled low on the virtual dice, and the game master announced a failure, so the player described how his character tried to fly to the back of the cave but hit a large rock and tumbled in a heap to the floor of the cave. The third player was successful at an attempt to fly her character's broom, so her character flew to her fallen comrade to cast a healing spell. Gameplay for the round continued until each player had taken a turn during the round, after which the creature, controlled by the game master, took an action. Each round of gameplay continued in this interactive manner until the narrative was resolved by the players to the satisfaction of the game master. A wide variety of language functions were employed during the game session.



## 4 Discussion

The goal of this study was to determine whether participants in TTRPGs employed ACTFL Intermediate Level and Advanced Level speaking functions during gameplay. The investigation revealed that, both theoretically and practically, online TTRPG players are likely to perform numerous target functions during typical gameplay sessions, although introductory sessions, involving character and location creation, were more limited in the range of elicited functions. As noted in Table 1, all of the ACTFL Intermediate and Advanced level functions had a corresponding task in typical TTRPG gameplay. The analysis of the session transcripts showed that the introductory, world building, asynchronous sessions were effective at eliciting Intermediate level functions, specifically description and asking and answering questions. Advanced level functions appeared in the more interactive live sessions that required players to work together to create a plan and then to take action during an encounter between their characters and a potential narrative antagonist. These sessions involved making plans, negotiation, clarification, and extensive narration. Therefore, the earlier sessions evoked lower-level speaking functions, and the latter sessions elicited more complex speaking functions.

Generally, the results of this study offer further evidence towards the value of games for language teaching and learning. More specifically, the results suggest the value of TTRPGs in helping online students develop oral language skills at the Intermediate and Advanced levels of the ACTFL speaking guidelines. Learners who engage in foundational, world-building TTRPG sessions that establish characters and locations are likely to engage in mostly Intermediate level functions; Advanced level functions are more likely to emerge in later sessions that involve planning, problem solving, and live narration. Teachers who desire a motivating way to engage their students in Intermediate and Advanced speaking functions should consider integrating TTRPG gameplay into their courses. Such gameplay is rich in language practice that targets the goals of Intermediate and Advanced level learners. These sessions can take place in-person or in online learning environments; however, more interactive tasks, such as negotiating and planning, may be easier to perform using synchronous communication modes (such as in-person sessions or live video conference meetings), as opposed to asynchronous modes that seemed sufficient for description tasks or simple question and answer interactions between classmates.

This study suggests the relative ease and limited preparation time required of instructors to integrate TTRPGs into their online language learning courses. Although some TTRPG gameplay can require large amounts of preparation for the game master, a rules light TTRPG, such as *Kids on Brooms*, shares the creation of the imaginary world among the players, with the game master, or teacher, serving primarily as a guide during the describe location and describe character sessions. Cover (2010) explains that in many TTRPGs, such as *Dungeons and Dragons* (Mearls & Crawford, 2014), the game master serves as the narrative director with

players as actors. However, in other TTRPGs, such as *Kids on Brooms* (Gilmour et al., 2020), players more actively participate in both creating and driving the story. Although, in this study, the early descriptive sessions were conducted asynchronously using video recordings that all classmates could watch and comment on, a synchronous session may also have worked. In such a case, a teacher may want to consider whether to assign students to small breakout rooms in which students describe their character or location and then field questions from group members, or whether the class is sufficiently small that such sharing can be conducted as a whole group without any students becoming distracted or disengaged.

The two latter sessions were conducted using live video conferencing. The synchronous nature of these sessions were conducive to the interactive nature of the negotiation and collaborative story-telling tasks that players engaged in. It would be possible to conduct these sessions asynchronously, with each player describing making a choice, rolling the dice, and describing an action, followed by the next player who could do the same after watching the previous player's recording. However, this would drastically increase the length of time required to complete a session, given that each round could last an entire day depending on the players' time zones and their access to the recordings. In contrast, the live session consisting of over five rounds was completed in less than 1 h.

Even in these live sessions, the only preparation of the game masters (consisting of the course teaching assistant in one session and the course instructor in the other session) was a prompt that explained the narrative context and an explanation of the task that the players were required to complete during the session. The game masters in the rescue planning session only participated to occasionally ask questions to get players to clarify their ideas or to restate ideas that players had shared. In the creature encounter session, the game master took a more active role by refereeing the rounds (ensuring that players took turns in order), by encouraging players to describe their choices and the results of dice rolls, and by describing what actions the creature took during its turn. As such, these interactive sessions of TTRPG play can also be relatively easy for a teacher to prepare, so long as the game master remembers that the goal is to encourage students to communicate and collaborative, creating a story of their choice rather than following a specific narrative outcome that the game master has in mind.

Further research into TTRPGs for language learning might explore the quality of speech production during TTRPG gameplay. For example, how well is the quality of pronunciation and grammar of the players, and whether the quality of the language differs depending on the types of TTRPG tasks in which players engage. Researchers and practitioners may also want to examine the use of other languages skills (reading, listening, and writing) involved in TTRPG gameplay and their connection to ACTFL proficiency guidelines.

## 5 Conclusion

This chapter summarized the main benefits of game-based learning in the language classroom. The value of games for language learning include student motivation as well as potential increases in learners' interpersonal communication skills and linguistic proficiency. There are also some challenges to using games in the language learning classroom, so instructors should be prepared to mitigate these issues by selecting games that are best suited to the learners, the curriculum, and the environment of their classrooms.

The benefits of game-based learning extend to online contexts where some games are even better suited to virtual participation, such as TTRPGs. These games involve collaborative storytelling among small groups of players with minimal game materials beyond dice. As such, TTRPGs are heavily language-dependent, making them an excellent medium for language learning practice. The current study conducted with an online English for academic purposes course revealed that, during TTRPG gameplay, learners used a variety of Intermediate and Advanced level speaking functions as defined by the ACTFL oral proficiency guidelines (2012). Online instructors who want to help students target these speaking functions should consider integrating TTRPGs into their course curriculum. Such gameplay may have positive influences on students' motivation, collaborative skills, and language proficiency.

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# Digitalizing a Multimodal Genre-Based Approach to Teaching Elevator Pitch: Pedagogical Implications and Students' Experiences



Vicent Beltrán-Palanques

**Abstract** The health situation brought about by COVID-19 has contributed to the emergence and implementation of novel teaching formats (e.g., hybrid, online) in higher education. This scenario, characterized by the increasing use of technology and digital resources, calls for a methodological and pedagogical shift to best support the teaching and learning process. This study aims to discuss the digitalization of a multimodal genre-based approach to teaching Elevator Pitch presentations in the ESP context. In doing so, we report on the methodological adaptations needed to digitalize and implement the pedagogical proposal and the implications of its transition to an online environment. In addition, this study explores the learning experiences of students as recipients of the pedagogical proposal. Methodologically, a survey was administered to identify students' perceptions of the application of the pedagogical proposal. The results provide insights into the students' perceptions of its implementation concerning the classroom dynamics, the digital resources used, and the presentation format. The study concludes with a reflection on the implications of carrying out digitalization and the transition to online environments.

**Keywords** Online university teaching and learning · ESP · Digital resources · Multimodal genre-based pedagogy · Elevator pitch presentations · Multimodal literacy

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## 1 Introduction

The unprecedented sanitary emergency caused by the COVID-19 outbreak has had repercussions in almost every aspect of life. Education is not an exception as the pandemic has disrupted regular face-to-face teaching worldwide. Most higher education institutions have been forced to make pedagogical adaptations, generally characterized by the increasing use of technology and digital and audiovisual resources. In early 2020, rapid on-the-spot adaptations were required to continue with the academic commitment. However, at that time, most lecturers were somewhat ill-prepared to make an effective transition from on-campus to distance teaching. Consequently, tutorials and courses on how to teach online began to become popular. Although necessary then, online teaching and learning may go beyond the mere use of technology, digital resources, and emergency teaching practices (González-Lloret, 2020). Thus, teaching and learning online entails a complex methodological and pedagogical shift in which semiotic technologies and new forms of interaction come to the fore.

During the first period of the pandemic, as well as in the following academic year, the implementation of various teaching formats such as online, hybrid or hyflex (hybrid-flexible) became mainstream. These teaching formats can offer distinct teaching and learning experiences. The first involves an online environment; nevertheless, the other two entail a combination of face-to-face and online settings. In a hybrid format the same students participate in both on-site and online sessions, while in a hyflex format some students are physically in the classroom and others are online (Ruday & Cassidy, 2021). These teaching formats may include synchronous and asynchronous modes of communication with varying types of interaction. The teaching environment selected, in turn, may influence course design, planning, assessment, and delivery (Querol-Julián & Beltrán-Palanques, 2021).

The present study is motivated by the need to better understand how to transition from conventional on-site teaching practices to novel formats in English for Specific Purposes (ESP) in a foreign language context. Arguably, this shift should be done consciously to offer students an effective learning experience focused on the development of the fundamental skills and necessary competences. For this purpose, language teachers should enhance students' multimodal communicative competence and multimodal literacy. Specifically, multimodal communicative competence (Royce, 2007) transcends the traditional language-based approach and recognizes the contribution of other semiotic modes in the meaning-making process. This notion is related to multimodal literacy, which may be understood as the knowledge students can gain to understand, navigate, and communicate effectively through a variety of semiotic resources (e.g., Liang & Lim, 2021; Lim, 2018). Researchers have initiated discussions on the implementation of multimodality in the language classroom. For example, Lim (2018) proposes a pedagogical model based on the Systemic Functional Linguistic (SFL) approach (O'Halloran, 2007, 2008) and aligned with the Learning by Design Framework (Cope & Kalantzis, 2015) to

provide students with the required literacy to construct multimodal texts. Liang and Lim (2021) also present a pedagogical framework that engages students in digital multimodal composing and guides them to develop the knowledge and skills needed for digital communicative practices. Similarly, Jiang (2017) documents the benefits of implementing digital multimodal composing in the language classroom.

In the context of specialized language, Ruiz-Madrid and Valeiras-Jurado (2020) recommend the adoption of a multimodal discourse perspective to implement the genres of Product and Research Pitch presentations. Likewise, Ruiz-Madrid (2021) explores, from a multimodal discourse perspective, the opening and closing moves of Research Pitches and introduces an informed-based approach to training novice researchers. Drawing on SFL and multimodality, Morell (2015) discusses a model for teaching conference presentations in English as a lingua franca, in which special attention is paid to the construction of ideational, textual, and interpersonal meanings. Furthermore, a growing number of studies draw on genre-based pedagogy (e.g., Martin & Rose, 2005) to address multimodal discourse practices in the classroom. For example, Feng (2021) examines, among other aspects, the integration of the multimodal digital genre of PowerPoint presentations in ESP. Querol-Julián and Fortanet-Gómez (2019), adopting a SFL perspective, propose a multimodal genre-based approach to dealing with conference presentations in the English for Academic Purposes classroom. Overall, these studies presented thus far attempt to examine ways to raise students' awareness of multimodality through the construction of specific genres.

In addition to this, a few studies have discussed the implementation of multimodality in ESP contexts during the COVID-19 times. For example, Querol-Julián and Beltrán-Palanques (2021) propose a team-teaching proposal between the ESP lecturer and the English-medium instruction/education lecturer to deal with the multimodal genre of PechaKucha presentations (20 slides, 20 s each slide). The authors explain the transition of the pedagogical model from a face-to-face to an online context and reflect on the methodological and pedagogical adaptations needed for its effective implementation. Similarly, Beltrán-Palanques (2022) describes the transition from an on-site to an online setting of a multimodal genre-based approach to teaching Elevator Pitch presentations. To this end, the author discusses the digitalization of the pedagogical approach, and the challenges ESP teachers may face throughout this process. Fundamentally, these studies seek to reflect on the methodological and pedagogical changes that are necessary to carry out an effective transition, as well as to respond to the demands of the digitalization of language teaching and learning during the pandemic.

The purpose of this study is twofold. First, it aims to discuss the implementation of a digitally enriched pedagogical proposal and the implications when moving it into an online setting. Second, it attempts to explore students' learning experiences as recipients of the adapted pedagogical proposal. The present study, carried out during the COVID-19 times, will serve as a case in point to describe the teaching action taken to cover the syllabus during the sanitary situation.



## 2 A Multimodal Approach to Teaching Elevator Pitch Presentations

The pedagogical approach presented here focuses on the genre of Elevator Pitch presentations. This genre was chosen to develop students' multimodal competence and literacy, as well as their creativity and critical thinking skills. This genre falls into the category of blitz or rapid-fire presentations and is characterized by its brevity (Harinck & van Leeuwen, 2020). Broadly speaking, an Elevator Pitch is defined as an innovative oral presentation (Daly & Davy, 2016) that is usually, but not exclusively, associated with the business field. In an Elevator Pitch presentation, speakers are expected to effectively present an idea or a product in a highly engaging and persuasive manner without digression. The presentation should be brief and concise (e.g., about a minute) and as clear as possible to the audience, who may be potential investors. As in any other type of presentation, to effectively deliver an Elevator Pitch, speakers should pay attention to how to convey content (ideational meaning), organize discourse (textual meaning), and establish a relationship with the audience (interpersonal meaning) (Halliday, 1978). Due to the multimodal nature of Elevator Pitch presentations, speakers should also center on how to instantiate these three meanings multimodally.

A way to implement genres in the classroom is through genre-based pedagogy. In this case, we draw on the model proposed by Querol-Julián and Fortanet-Gómez (2019), proven to be effective to address spoken genres from a multimodal perspective (see Beltrán-Palanques, 2022; Querol-Julián & Beltrán-Palanques, 2021). This teaching/learning cycle has three phases, namely joint deconstruction, joint construction, and independent construction (Martin & Rose, 2005). In the deconstruction phase, the teacher can identify students' prior knowledge, focus on specific model texts (e.g., language features and structure, communicative purpose), and guide them to deconstruct samples through demonstration, modeling, and discussion. The joint construction phase goes a step further as the teacher and students co-construct sample texts that are aligned with those explored in the previous phase. Thus, collaboratively, they attempt to reflect, for example, on the structure of discourse, the communicative purposes, or the use of semiotic resources. As for the independent construction phase, students are encouraged to construct their samples.

The model devised for this study involves a contextualized language teaching/learning experience in which students go through systematized phases aimed to enhance their multimodal competence and literacy. Table 1 presents the structure of the multimodal genre-based approach developed for the study.

As shown above, the model consists of three phases, each one containing various steps that serve to engage students in the multimodal composition of an Elevator Pitch presentation. These phases go from a more teacher-dependent stage (i.e., joint deconstruction and joint construction) to a more independent stage (i.e., independent construction) in which students, autonomously, construct their presentation. Throughout this model, students are offered opportunities to critically analyze samples and innovative ideas, as well as to participate in peer feedback and assessment practices.

**Table 1** Phases and steps within the multimodal genre-based model. (Based on Beltrán-Palanques, 2022; Querol-Julián & Beltrán-Palanques, 2021; Querol-Julián & Fortanet-Gómez, 2019)

Pedagogical model		
	Phase	Step
Session 1	1. Joint deconstruction	1.1. Introduction and genre presentation 1.2. Sample analysis and discussion: Multimodal deconstruction
	2. Joint construction	2.1. Recapitulation 2.2. Generation of ideas 2.3. Feedback and discussion 2.4. Guidelines generation
Session 2	3. Independent construction	3.1. Planning and preparation 3.2. Rehearsal 3.3. Presentation 3.4. Discussion and peer assessment

### 3 Methodology

#### 3.1 Context

Most Spanish higher education institutions are on campus, with the exception of some distance-learning universities. Accordingly, before the pandemic, education within the Spanish context was generally face-to-face, as is the case analyzed in the present study. Specifically, this study was carried out at a Spanish university (Universitat Jaume I) during the COVID-19 times with a group of students majoring the Bachelor's Degree in Video Game Design and Development. The chosen ESP course consists of theoretical and practical sessions, and it is intended to prepare students for professional communication in their field of specialization. The practical sessions involve two sub-groups, practice 1 and practice 2.

The pedagogical proposal was implemented during the first term of 2020/2021 in a group of 57 students, who were mostly first-year students. In addition to their interest in the field of video games, these students also showed enthusiasm for aspects related to digital communication, audiovisual media, programming, and art.

The course was originally planned to be taught face-to-face but with the worsening of the COVID-19 pandemic, it was temporally delivered online. The pedagogical proposal was implemented in two sessions of 3 hours each. The first session (i.e., joint deconstruction and joint construction) was developed on-site, and the second session (i.e., independent construction) was carried out online. The implementation of the proposal was conducted during the practice sessions. Therefore, the teacher applied the approach twice.

Given this unusual situation, it was decided to explore students' learning experiences in both scenarios (i.e., face-to-face and online) through a survey. From the full group of 57 students, 18 students volunteered to complete it. The small number of participants may be due to its voluntary nature. Also, its administration coincided with a time when other surveys were sent out (e.g., institutional surveys). These issues may have resulted in a smaller than desired pool for the present study.

### 3.2 *Instrument*

An online survey, powered by Qualtrics, was developed to gather information as regards students' learning experiences. Two external lecturers from the field of Applied Linguistics reviewed the survey and provided feedback on its design, sections, and individual items. The survey consisted of nine blocks with a total of 25 items:

1. Consent form (1 question)
2. The genre (1 question)
3. Face-to-face sessions (3 questions)
4. Online sessions (3 questions)
5. Preparing, recording, editing, and presenting the Elevator Pitch (6 questions)
6. Elevator Pitch: Asynchronous vs. synchronous (4 questions)
7. Assessing the Elevator Pitch (2 questions)
8. Overall experience and professional development (4 questions)
9. Comments (1 question)

Due to space limitations and the scope of the chapter, we selected some blocks that seemed to be relevant to this study. Table 2 shows the chosen blocks.

As illustrated above, four blocks were selected. While the first two referred explicitly to the learning experience in both scenarios, the third focused on the presentation delivery format, and the fourth on the assessment procedure. The survey was made available through the virtual platform upon completion of the pedagogical implementation.

## 4 Pedagogical Implementation

Owing to COVID-19 circumstances, technology and digital resources were integrated into the pedagogical proposal from the onset. This was done not only to comply with the sanitary situation on campus (e.g., social distancing in the classroom) but also to support and facilitate an urgent transition to an online teaching format. Digital resources were carefully selected according to their pedagogical affordances to promote interaction and engage students in classroom dynamics, such as individual or group work (both on-site and online). Specifically, the proposal was digitally enriched using *Google Jamboard*, *Google Slides*, and *Mentimeter* (Classroom Response System (CRS), also known as “Clickers”). *Google Jamboard* and *Google Slides* were useful to enhance both group and individual work. *Mentimeter* was employed to pose questions online, foster interaction, and collect students' responses. Furthermore, *Google Meet* and *Discord* supported the development of the online session. *Google Meet* was chosen as it allows for videoconferencing and instant messaging (i.e., video-, audio-, and/or text-based communication) as well as video recording. *Discord* is a free voice, video, and text group-chatting

**Table 2** Blueprint of the chosen items of the survey

Item	Answer type
<i>Face-to-face sessions</i>	
Q1. How satisfied are you with the face-to-face session devoted to the Elevator Pitch?	Multiple-choice
Q2. Was the face-to-face session devoted to the Elevator Pitch interactive?	Multiple-choice
Q3. In the face-to-face session, was it useful to...?	Multiple-choice
<i>Online sessions</i>	
Q4. How satisfied are you with the online session devoted to the Elevator Pitch?	Multiple-choice
Q5. Was the online session devoted to the Elevator Pitch interactive?	Multiple-choice
Q6. In the online session, was it useful to...?	Multiple-choice
<i>Elevator Pitch: Asynchronous vs. synchronous</i>	
Q12. Was it challenging for you to present the Elevator Pitch asynchronously?	Multiple-choice
Q13. Justify your response.	Open
Q14. Do you think a live presentation would be more challenging?	Multiple-choice
Q15. Justify your response.	Open
<i>Assessing the Elevator Pitch</i>	
Q16. In the online session, was it useful to...?	Multiple-choice
Q17. You can add any other comment related to your experience while working in small groups to assess the presentations	Open

platform that enables users to create themed servers and open rooms within them. This digital platform was helpful in facilitating spaces for group work.

The pedagogical proposal was implemented in two sessions. The first session was delivered face-to-face, while the second one was online. In what follows, we present an overview of the implementation of the pedagogical proposal.

The joint deconstruction phase comprises two steps: Introduction and genre presentation (1.1.) and Sample analysis and discussion: multimodal deconstruction (1.2.). In the first step (1.1.), the teacher, to activate students’ background knowledge, contextualized and introduced the topic of oral presentations without explicitly referring to the format of an Elevator Pitch. The teacher posed a few questions (e.g., *have you ever given an oral presentation? what was the topic of your presentation? how did you feel?*) to make the students reflect on their prior experience. Then, to familiarize the students with the genre, the teacher defined the main characteristics of an Elevator Pitch focusing on its communicative purpose, format, and structure. That is, the teacher briefly explained that an Elevator Pitch consists of a short oral presentation in which speakers present innovative ideas/products to potential investors. Then, he described its structure drawing on Daly and Davy (2016, p. 124):

- 0. Pre-pitch action/comment (optional)
  - 1. Greeting the audience (optional)
  - 2. Identifying oneself and one’s company, product or service

3. Announcing amount of investment required
4. Explaining/presenting the production or service
5. Presenting the history/achievements of company and/or founder(s) (optional)
6. Describing future plans
7. Presenting target customer(s) (optional)
8. Recapitulating and developing (optional)
9. Thanking the audience (optional)
10. Expressing willingness to answer questions (optional)

Next, the notions of persuasion and engagement (interpersonal meaning) were addressed, as they are essential to the success of Elevator Pitch presentations. This is because presenters try to convince the audience of the originality and usefulness of an idea or a product, as well as to attract and hold their attention. To illustrate this, the teacher showed two videos: the spot of an Elevator Pitch event and an Elevator Pitch contest winner. The former was a video that announced a virtual competition (Rice Business Plan Competition, RBPC) that was celebrated in the US in 2020. The latter involved a face-to-face presentation that took place at a university in the US. These two videos helped introduce the genre and discuss its professional and innovative nature. The second video also served to identify and discuss the varied semiotic resources the speaker used to construct meaning (e.g., gestures, gaze direction, facial expressions).

After this short introduction, the students were organized into groups (4–5 members in each) to carry out two analyses (1.2.). Approximately, 7 groups were formed in each of the practice groups (i.e., practice 1 and practice 2). For each analysis, the teacher chose an Elevator Pitch presentation delivered online during the pandemic in the 2020 RBPC Elevator Pitch competition. Presentations delivered online were purposely chosen because the students had to prepare a similar digital project.

The students watched the videos at their own pace using their devices (e.g., laptops, tablets). For the first analysis, they were asked to explore the structure (following Daly and Davy (2016)) and the type of language the presenter employed (e.g., expressions, verb tenses). For the second analysis, the students were asked to observe the strategies the presenter used to address the audience, maintain their attention, and convince them of the usefulness of their idea/product. For both analyses, the students were encouraged to identify notable semiotic resources (e.g., gestures, gaze direction, facial expressions) the presenters instantiated while performing the Elevator Pitch. Each group provided the outcomes of their analyses on a *Google Jamboard* slide. The students' outcomes were shown on the screen and all together, guided by the teacher, commented on them.

The joint construction involved four steps: Recapitulation (2.1.), Generation of ideas (2.2.), Feedback and discussion (2.3.) and Guidelines generation (2.4.). To recapitulate (2.1.) and further explore how presenters create interpersonal meaning, the students watched a sequence of two entrepreneurs trying to persuade and engage a jury. In this case, it consisted of a face-to-face presentation taken from the British TV program *Dragons' Den*. This video was chosen because it showed the judges' feedback and comments on the usefulness of the ideas and products presented. The

students were asked to justify how the two presenters persuaded and engaged the jury. They worked individually and provided their responses on *Mentimeter*. Then, the teacher showed the students' contributions, and all together commented on them.

To start working on their presentations (2.2.) and receive support from the teacher and their peers (2.3.), the students were asked to generate ideas (ideational meaning) for their Elevator Pitch. They were asked to think of innovative ideas/products framed within their field of expertise. Since the Elevator Pitch presentations had to be performed individually, each student worked on their own and wrote their ideas on a *Google Jamboard* slide. Once their ideas were posted, oral peer feedback and discussion were held to help students improve the quality of their ideas.

After that, the teacher and the students co-constructed some basic guidelines for their Elevator Pitch presentations (2.4.). The guidelines contained recommendations about how to organize the spoken discourse (Daly & Davy, 2016) and establish interpersonal meaning with the audience from a multimodal perspective. Some of these suggestions were, for example, posing rhetorical questions, using self-references and referential *you*, adopting an appropriate body posture in front of the webcam (e.g., head and trunk position), using gestures to accompany discourse, and looking at the webcam.

Finally, the students were encouraged to start working on their presentations. A submission deadline was set. They were asked to prepare a 1-min digital Elevator Pitch presentation with no slides, similar to the digital presentations explored in the joint deconstruction phase. *Google Meet* was proposed to support video recording. Although a live presentation would be recommended, an asynchronous presentation was deemed beneficial. This type of format allows students to pause and restart their speech and prepare a final version they feel comfortable with. It is generally true that asynchronous presentations, compared to live presentations, could be less natural and lack spontaneity. Nevertheless, in this case, this format was considered suitable to make the students practice and rehearse, reflect on their communicative skills, and foster their multimodal literacy.

The independent construction phase was delivered online. It was made up of four steps: Planning and preparation (3.1.), Rehearsal (3.2.), Presentation (3.3.), and Discussion and peer assessment (3.4.). The first three steps involved autonomous work outside the classroom. The students had 2 weeks to plan and prepare the Elevator Pitch, rehearse and perform the presentation in video format, and edit the video if required.

The live online session was supported by *Google Meet*. In order to engage the students in group work, breakout rooms were created on *Discord*. The students were divided into groups of 4–5 members to co-assess some Elevator Pitch presentations (approximately 4). For this purpose, each group entered a *Discord* room to watch some of the presentations, formulate a few questions for the presenters (*Google Jamboard*), and prepare a short presentation (*Google Slides*). The assessment focused on how ideational (topic), textual (structure), and interpersonal (persuasion and engagement) meanings were multimodally instantiated. To guide the students' task, the following questions were posed: *what is it about? how is it structured? does the presenter connect with the audience?* (Morell, 2015).

Each group worked in a specific breakout room (Fig. 1). The teacher entered rooms at his discretion or when notified by a group member. The students were allowed to enter other rooms if necessary/desired.

Based on the teacher’s experience, we may point out that the interaction generated on the *Discord* rooms was different from that on *Google Meet*. When the students were in their breakout rooms, they led their discussions, shared their screens, and became responsible for the ongoing flow of interaction. All the group members generally interacted. However, while the students were on *Google Meet*, the level of interaction was more limited as only a few participated. This could be possibly attributed to the fact that they were in a large room and English was the language of communication. In contrast, when the students were in their breakout rooms, they tended to use Spanish among them. English was mainly used to interact with the teacher and to complete the task.

After completing the task, the students went back to *Google Meet* to carry out the discussion and peer assessment activity. Figure 2 shows how the interaction was constructed during this session.

Each group posed specific questions and commented, one at a time, on the Elevator Pitch presentations they examined. Their speech was visually supported by *Google Jamboard* (Fig. 3) and *Google Slides* (Fig. 4).

Group members and presenters had to switch on their webcams and interact orally. In this situation, the use of chat was only allowed to provide any extra information (e.g., links) or if a student experienced a technical problem. The teacher moderated the session while the students were actively engaged in the discussion. The same procedure was followed for each of the groups. To conclude the session, the teacher made some general remarks about the organization of the discourse and the way in which the students established interpersonal meaning. In addition, he

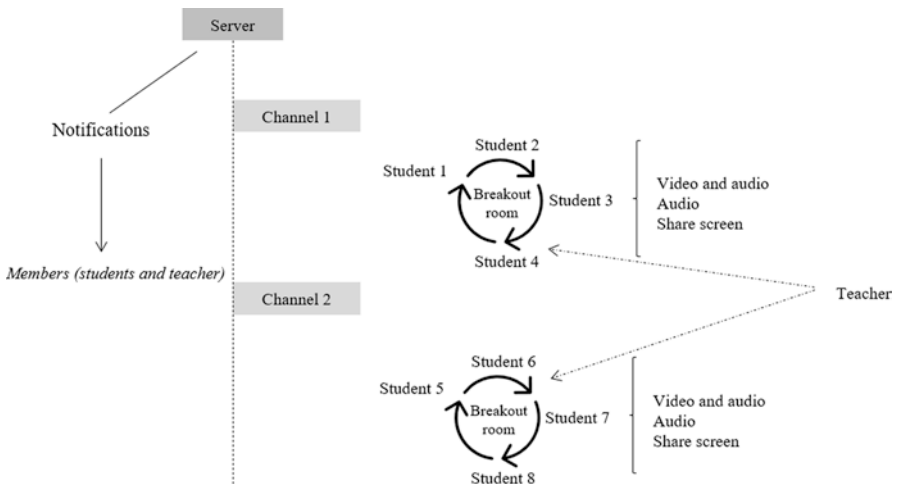


Fig. 1 Sample of breakout room interaction. (Self-developed)



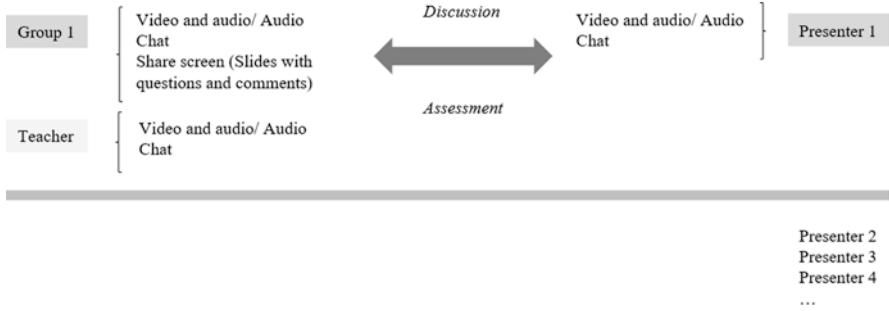


Fig. 2 Interaction in the main room. (self-developed)



Fig. 3 Examples of students' questions on Google Jamboard

**How is the speech organised?**

The video is organized in the following way. First, he exposes the problem with his personal experience and asks a question that relates his introduction to the product. Then he presents himself, gives some context and exposes his product. He says the future plans and finally asks for questions. Language examples are: also, as well, and, now, could ...

**Do the presenters follow the structure?**

Yes, he has used the correct structure but has forgotten something mandatory: does not announce how much investment he needs.

**Do the presenters attempt to persuade the audience? How do the presenters engage with the audience?**

He feels very safe through his gestures and his way of speaking. That makes the audience feel confident and shows that what he is proposing is important.

He feels very sure on what he is saying when presenting and can easily convince. The only thing he lacks to convey more confidence moving from one side to the other standing up.

Fig. 4 Example of students' comments on Google Slides

reflected on the multimodal resources the students used to construct meaning in the Elevator Pitch presentation.

Throughout this online session, the interaction between the teacher and the students took place through *Google Meet* and *Discord*. Both platforms allow for audio, video, and chat communication. In the main room (*Google Meet*), the teacher used video and audio to deliver the session. He usually responded to the students' comments and questions orally and made use of the chat to, for example, share links. The students typically employed audio and chat to interact with the teacher. They

rarely switched on their webcams in these interactive episodes; nevertheless, they turned them on during the discussion and peer assessment step. The interaction among the students typically occurred via audio and chat. Some of the students' contributions to the chatbox involved sharing information and links and solving technical problems. While the students were working in their breakout rooms (*Discord*), they usually used audio to communicate with their peers, although some switched on their webcams. The teacher had his webcam turned on when interacting with the students on *Discord*. Additionally, the students interacted through an instant messaging app while the session was in progress. In some ways, that was useful for reporting on unexpected situations that occurred during the session.

The use of semiotic technologies (Lim, 2021) was necessary for the design and implementation of the pedagogical proposal. The major challenge was to come up with solutions to engage the students in the activities and promote interaction. For this purpose, we selected digital applications (i.e., *Mentimeter*, *Google Jamboard* and *Google Slides*) that served to involve the students in the activities and promote interaction. Likewise, we used platforms that permitted video/audio/written communication (i.e., *Google Meet* and *Discord*). In turn, these applications were useful for fostering varied classroom dynamics that enhanced students' interaction. It should be noted that these applications can also be integrated into face-to-face lessons. More specifically, *Mentimeter* and *Google Jamboard* may be beneficial to boost students' participation and interaction, and *Google Meet* to carry out asynchronous presentations.

## 5 Students' Learning Experience: Results and Discussion

Eighteen students volunteered to complete the survey, which was administered to explore their learning experiences as recipients of the pedagogical implementation.

The students were asked to indicate their level of satisfaction with the face-to-face and online sessions. Overall, the students were satisfied with the two sessions, even though they seemed to be more pleased with the face-to-face session ( $n = 17$ ; very satisfied 4, 13 satisfied) than with the online session ( $n = 14$ ; very satisfied 5, satisfied 9). This result may be probably related to the students' familiarity with the face-to-face teaching format. Moreover, the transition to the online format was not initially planned and perhaps some students felt a bit uncomfortable with this change.

Concerning classroom interaction, the results show that the online session was generally understood as slightly more interactive ( $n = 16$ ) than the face-to-face session ( $n = 13$ ). A possible explanation for this result is that the opportunities for interaction in the online session were more varied. That is, the students had different channels of communication (e.g., chat, audio) to interact and, in most cases, they could select the one that was most convenient for them. Moreover, in the online setting, the students worked in breakout rooms without the constant presence of the teacher. Taking advantage of this situation, though, the students used Spanish more

frequently, which was detrimental to their practice of English; yet, it increased their positive perception of the online interaction situation.

In addition to this, we were interested in the students' perception of the usefulness of the classroom dynamics and the choice of the digital applications. Overall, the results point to the usefulness of the pedagogical decisions made and the digital resources selected.

In the case of the face-to-face session, the students considered it useful both to work in groups to carry out the analysis of the Elevator Pitch presentations ( $n = 14$ ; very useful 6, moderately useful 8), as well as to plan their ideas for the Elevator Pitch ( $n = 13$ ; very useful 8, moderately useful 5). An interesting result is observed regarding the provision of teacher and peer feedback ( $n = 16$ ; very useful 11, moderately useful 5). The teacher and, most importantly, the students provided their peers with feedback on the content of their proposals for the Elevator Pitch presentation. This result supports the suitability of the activity, which aimed to help the students improve the ideas for their presentations. Also, the results show that the digital applications exploited in the face-to-face session were convenient. Specifically, the students viewed it useful to answer questions through *Mentimeter* ( $n = 14$ ; very useful 3, moderately useful 11), provide comments on *Google Jamboard* slides ( $n = 11$ ; very useful 5, moderately useful 6), and post their ideas for the Elevator Pitch presentation on *Google Jamboard* ( $n = 15$ ; very useful 6, moderately useful 9).

For the online session, similar classroom dynamics and digital applications were implemented. In general, the students regarded the classroom dynamics and the choice of the digital applications as helpful. Specifically, the results indicate that the students perceived both group work to perform the assessment ( $n = 15$ ; very useful 6, moderately useful 9) and peer assessment ( $n = 14$ ; very useful 5, moderately useful, 9) as useful. These results seem to support the appropriateness of promoting group work activities that encourage students to reflect on and evaluate their peers' performance. The students had to post their questions on a *Google Jamboard* slide and create a *Google Slide* presentation with a few comments. In this case, using *Google Jamboard* was regarded as useful only for half of the students ( $n = 9$ ; very useful 4, moderately useful 5). Perhaps this digital resource was not that practical at that point, especially because the students had to also elaborate on a presentation. On the other hand, most of the students found it useful to prepare a presentation with *Google Slides* ( $n = 13$ ; very useful 6, moderately useful 7). This presentation was helpful for the students to structure and visually represent their assessment comments. By making students create such presentations, teachers can try to enhance their skills to communicate in digital contexts. Furthermore, the students were asked about the usefulness of employing *Google Meet* and *Discord* to promote interaction. Although both platforms were useful, the students seemed to prefer *Discord* ( $n = 17$ ; very useful 12, moderately useful 5) to *Google Meet* ( $n = 14$ ; very useful 7, moderately useful 7). This result can be expected since they proposed using *Discord* for the online session. This group of students was quite familiar with this platform since it is commonly used by the gaming community. Moreover, *Discord* was probably considered to be more convenient to the students for two

reasons: first, interaction took place in small groups; second, the absence of continuous monitoring from the teacher offered them the possibility of using Spanish. In contrast, interaction on *Google Meet* happened with the entire group using English. In turn, this finding could explain why the students, as noted above, perceived the online session as more interactive than the face-to-face session.

Finally, we were interested in exploring the students' perceptions regarding the presentation format. As explained in the previous section, the students prepared an asynchronous Elevator Pitch presentation. The students recognized that performing the presentation asynchronously was, overall, challenging ( $n = 15$ ; moderately challenging 8, slightly challenging 7). Besides, they were asked whether delivering the presentation live, either on-site or online, would represent a more challenging experience. As expected, all the students reported that it would be more challenging ( $n = 18$ ; definitely yes 16, probably yes 2). In this case, however, we did not ask them which format within the two synchronous modalities (i.e., on-site or online) would be more challenging. This information could have served to decide which one to use in future implementations.

The students were requested to justify their responses. Six students claimed that in an asynchronous presentation they had more time to prepare and video-record themselves as many times as necessary to improve their delivery. Likewise, nine students commented that the synchronous modality would be more challenging because of the impossibility of editing and restarting the presentation. Another key aspect was the presence of the audience. Specifically, three students indicated that an asynchronous presentation might be less demanding than a live presentation due to the lack of an audience. This is also supported by the fact that three other students stated that a live presentation would be more complicated precisely because of the presence of the audience. In general, these results appear to suggest that the students showed a preference for the asynchronous format.

The survey shed some light on the students' experience throughout the implementation of the multimodal genre-based approach. The findings suggest that the students were generally satisfied with both teaching formats, even though they showed a preference for the face-to-face classroom. With reference to the interactive nature of the two sessions, the students appeared to find the online session slightly more interactive, probably because the online setting offered more varied channels to communicate (e.g., chat, breakout rooms) than the face-to-face session. Concerning this, the use of *Discord* was perceived as particularly useful. In this context, the students had great opportunities to interact with each other to accomplish the peer assessment activity. Nevertheless, the presence of the teacher was somehow limited and therefore the students tended to use Spanish. On this matter, it seems that the presence of the teacher should be increased to encourage students' use of English. The breakout rooms were also beneficial to provide the students with opportunities to take a more active role and become more responsible for their learning process (e.g., Hansen-Edwards, 2013).

Moreover, it should be noted that the methodological decisions regarding the choice of the classroom dynamics and digital resources were proven to be effective. In general, group work and feedback/assessment activities were identified as quite

fruitful. In a way, these findings serve to justify the decisions made to promote the students' engagement in the activities, reflection on the construction of the Elevator Pitch, and interaction. The digital resources used in the pedagogical proposal were effective since they enabled the students to actively participate and engage in the activities. Besides, they were beneficial to promote interaction and collaborative work. Nevertheless, the findings suggest that sometimes digital resources may not be that necessary (i.e., *Google Jamboard* in the discussion and peer assessment step). Finally, the results show the students' preference for asynchronous presentations, mainly due to the possibility of preparing and editing a version they find appropriate and presenting it without the presence of an audience.

Overall, these findings seem to highlight the effectiveness of the methodological decisions made to design the pedagogical proposal during the COVID-19 times. Digital resources were carefully selected to engage the students in a range of activities and promote interaction. The digitalization of the pedagogical approach contributed to making the students aware of the complexity of interacting and constructing meaning online. By the same token, the elaboration of a digital multimodal composition (Elevator Pitch presentation) served to develop the students' multimodal literacy, which is essential in contemporary communication.

## 6 Conclusion

This chapter invites reflection on how digital technologies can support and facilitate language teaching and learning. As described in this chapter, digitalizing and moving into an online environment goes beyond the mere use of technology. A well-defined methodological approach is required to better adapt pedagogical practices to the new teaching formats (González-Lloret, 2020; Querol-Julián & Beltrán-Palanques, 2021). Nevertheless, the digitalization and transition to online contexts should be done considering students' communicative needs and the development of their multimodal literacy (Lim, 2018; Querol-Julián & Beltrán-Palanques, 2021). Against this backdrop, this study aimed to present a digitally enriched multimodal genre-based approach, its transition to an online environment, and implementation, as well as to explore the students' learning experiences as recipients of this proposal.

The first part of the study offers insights into how a multimodal genre-based approach, focused on Elevator Pitch presentations, can be digitally enriched and transitioned to an online context. As discussed, the use of semiotic technologies (e.g., digital applications) was needed to support the design and implementation of the proposal. Methodological decisions ensured the implementation of the proposal both on-site and online. The main concern was to select specific classroom dynamics and digital applications that served to engage the students in the pedagogical process, meet their learning objectives, and promote interaction. The study described the implementation of the pedagogical proposal and the use of technology and digital resources to support the completion of the activities and promote interaction.

The second part of the study focused on the students' learning experience throughout the pedagogical proposal. For this purpose, a survey was administrated upon its implementation. Overall, the results seem to show the usefulness of the efforts made both to digitalize the multimodal genre-based approach and to choose specific classroom dynamics. Specifically, the students viewed the digital applications employed as quite useful for carrying out the activities and interacting. As to classroom dynamics, working in groups and providing/receiving feedback and assessment comments were highly valued. These findings may have implications for future applications of the model in terms of the procedure followed, the design of the activities, the classroom dynamics, and the selection of the digital applications. The survey also provided information on the students' preference for asynchronous presentations mainly due to the possibility of repeating the recording until it was convenient. Although live presentations may be generally advisable, asynchronous presentations are also valuable to promote students' multimodal literacy. In a way, this can contribute to making students aware of how the meaning-making process is constructed and represented in digital contexts.

The results from the survey seem to point to general satisfaction with the procedures followed to implement the pedagogical approach. Nevertheless, the reduced number of students who responded to the survey does not allow us to make any strong claims in terms of the effectiveness of the pedagogical adaptation. A larger number of students responding to the survey would have been desirable. In future studies, the number of participants should be expanded to determine the effectiveness of the pedagogical adaptation. Another limitation is that the students' multimodal awareness was not measured. Therefore, further research should be carried out to explore students' development of multimodal literacy.

By and large, this study attempted to illustrate how semiotic technology can be exploited to digitalize language teaching and learning. Well-informed methodological decisions are necessary to best adapt to novel teaching formats. Although the findings of this study are limited to a specific teaching context, the experience described here may serve other teachers that aim to digitalize language courses in ESP.

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# Optimizing English Pronunciation of German Students Online and with Praat



Marcel Schlechtweg

**Abstract** The present chapter outlines how the phonetic software Praat can be used to improve the pronunciation of German learners of English in an online-based environment and by focusing on one specific case. Bringing linguistic aspects into the virtual language classroom represents a key aspect in the current approach and functions as the starting point of the practical learning scenario described here. Further, a well-balanced mix of guided, individual, and cooperative elements characterizes the concept. A concrete example of an exercise is discussed and the goal is to tackle a known source of inaccuracy for German learners of the English language at a rather low level; in particular, it is illustrated how acoustic and auditory information can help optimize the realization of the voiceless interdental fricative /θ/, which is part of the English but not of the German sound inventory.

**Keywords** Production · Praat · L1 German · Linguistic knowledge · Interdental fricative · Content-based learning

## 1 Introduction

Remote working and learning scenarios are not only necessary under certain social or global circumstances but are also currently becoming more and more accepted. Online elements offer different substantial benefits, but they must be consistently evaluated and improved in order to maintain their status within our economic and educational system. The current chapter aims at presenting an exercise that can be used to optimize learners' pronunciation of English in an online-based environment

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by combining theoretical aspects of linguistics with practical ideas for the virtual classroom. Praat, a freely available speech analysis program, and the acoustic and auditory characteristics of spoken language represent crucial aspects in this chapter. On the practical side, in turn, certain key notions that have been considered to represent essential ingredients of modern language learning and teaching are used, such as a well-balanced mixture of instruction, individual, and partner work. Native speakers of German at a rather low level in English can take advantage of the work presented here, but the exercise might also be useful for learners with another linguistic background, possibly with modifications. Also, the general spirit of the exercise might help develop tasks concentrating on different pronunciation issues, such as vocalic, other consonantal, or prosodic difficulties, which could be approached with Praat, too.

The chapter is structured as follows. Section 2 introduces the necessary theoretical background of our work. That is, first, the focus lays on one well-known difficulty German learners face when using the foreign language English. Second, the Praat software is introduced and it is described how this tool has been used in the foreign language classroom so far. It is argued that more work on this topic is needed, and the objective is to present a learning situation in which Praat is used more easily and systematically. In contrast to most previous work, a detailed plan is given in this chapter, which can be directly used and integrated into the virtual foreign language classroom. Third, further features that are well-established in the didactic community are discussed, which are supposed to contribute to the success during the learning period. The specific exercise is described in Sect. 3. It primarily aims at helping German native speakers who are learners of English at a low level to improve their realization of the interdental fricative /θ/, a sound that is used in English but not in German, and to distinguish this sound from the common /s/, which both languages use. Praat represents a key component of this virtual exercise. The exercise is further discussed in Sect. 4, before the chapter is concluded in Sect. 5.

## 2 Theoretical Background

### 2.1 *The Problem: The Production of /θ/ in German Learners of English*

Learning a foreign language can imply that individuals are exposed to linguistic structures or phenomena in the target language that their native language does not use. Cross-linguistic variation can be detected on multiple levels such as the syntactic, morphological, lexical, phonological, or phonetic ones. When speaking a foreign language, phonological and phonetic peculiarities take a major place in the learning process. Although a profound discussion of theoretical models on the acquisition of non-native speech sounds is beyond the scope of this paper, it is well

known that several of these models assume that one's native language plays a decisive role when learning a foreign language. The theoretical point of departure are the Perceptual Assimilation Model (PAM, Best & Tylor, 2007) and the Speech Learning Model (SLM, Flege, 1995), which incorporate an idea relevant to the current project, namely the possibility that two sounds of a foreign language are mapped onto a single category in a speaker's native language. Specifically, the focus is on German learners of English who produce the English phonemes /θ/, which is not part of the German sound inventory, and /s/, which is part of the German sound inventory, in the same way. Put differently, the two sounds, /θ/ and /s/, from the foreign language are mapped onto the single native category /s/.

Speaking is one of the key competences when learning a foreign language and accurate pronunciation can facilitate communication (see, e.g., Cook, 2013; Johnson, 2008). Of all the potentially difficult issues for German learners of English, one from the fricative inventory has been selected and an exercise to approach this problem has been developed. It is common knowledge that English, but not German, uses interdental fricatives (see, e.g., Carr, 2013; Grantham O'Brien & Fagan, 2016; Roach, 2009), and this often creates difficulties for German learners of English. As stated in Hickey (2020), German speakers typically replace the English interdental fricative [θ] with the alveolar fricative [s], which belongs to both the German and English sound inventory. Although the articulatory gestures, such as the tongue movements, involved in the production of interdental fricatives are quite marked (see, e.g., Ladefoged & Maddieson, 1996) and can be explicitly taught to learners of English, it is argued that reaching accuracy in the realization of interdental fricatives can be supported by the use of a combination of auditory, visually presented acoustic information, and numerical values of acoustic parameters. Differences in intensity and the energy distribution across frequencies are relied on to distinguish between the two types of fricatives [s] and [θ] (see also, e.g., Ladefoged, 2003; Machač & Skarnitzl, 2009; Varden, 2006; Zsiga, 2013), and to see whether the pronunciation of the English [θ] is adequate or still requires improvement. That is, for instance, the [θ] is less intense than the [s] and does not show a large amount of energy in the higher frequencies, which the [s] does. The two sounds will be contrasted in more detail in Sect. 3 when the exercise is described.

## ***2.2 Praat and Its Role in Pronunciation Learning and Teaching***

Our exercise presented later connects to a large body of research on pronunciation learning and teaching in general and with the help of technology in particular (see among many others, e.g., Low, 2015; Munro & Derwing, 2019; Pennington & Rogerson-Revell, 2019; Reed & Levis, 2015). The central program in the specific exercise presented in Sect. 3 is Praat (Boersma & Weenink, 2021), which is the standard tool in the phonetic and phonological sciences. It can be freely

downloaded from the internet within a minute. Apart from the quick and free access, Praat is attractive not only for researchers of theoretical, empirical, and applied linguistics but also for teachers and learners of languages for multiple reasons. These advantages include its immense range of possible functions and methods (see, e.g., Boersma, 2013), its user-friendly interface, and the availability of many online tutorials and sources that can assist one while working with Praat (see, e.g., Conrad, 2019; Mayer, 2017; Styler, 2021; van Lieshout, 2017; Wood, 2020). The functions relevant to the present chapter will be introduced step by step in Sect. 3. In particular, three categories of functions will be used, that is, the auditory /listening function, the visual representation of acoustic properties, and the mathematical calculation of acoustic parameters. Praat can be used offline on a computer; however, the activities in focus later are based on the assumption that learners and the tutor work together from home in a virtual space. Therefore, the second tool necessary for our project is the online communication platform Zoom (Zoom Video Communications, Inc., 2022).

The idea to bring Praat to the foreign language classroom is not a new one. Researchers have used the software to consider different phonetic and phonological aspects in a foreign language, such as consonants (see, e.g., Beňuš, 2021; Olson, 2014; Wilson, 2009), vowels (see, e.g., Brett, 2004; Schweinberger, 2020; Wulandari et al., 2016), and prosody (see, e.g., Aramipoor & Gorjian, 2018; Gorjian et al., 2013; Li, 2019) (for further reading, see also, e.g., Demirezen, 2017; Jolayemi & Oyinloye, 2019; Osatananda & Thinchang, 2021).<sup>1</sup> Despite previous work, it is claimed that the exercise presented in Sect. 3 adds an important piece and combines several aspects in an unprecedented way. That is, first, a systematic, detailed, and step-by-step plan is provided, which can be directly used by learners and teachers. This is a clear benefit in comparison to most previous work, where individual and interesting pieces have not been put in an easy-to-use program. Second, an online exercise is described, not a normal classroom activity, and the advantage of a virtual environment is emphasized. Third, our exercise has been designed against the background of the three positive didactic concepts mentioned in the next subsection (2.3).

### 2.3 *Further Methodological Considerations*

In order to achieve the ultimate goal of our idea, namely an improved pronunciation of English interdental fricatives, a bunch of didactic concepts are considered. First, a type of content-based language learning is offered by integrating theoretical linguistic knowledge, such as the physical properties of speech sounds, into the foreign language classroom. The topic, from physics, is discussed in the foreign language English as a topic on its own and simultaneously serves to improve one of the key

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<sup>1</sup>Note that the thoughts are restricted to the Praat program and ignore other tools on the market (see, e.g., Hincks, 2003, 2005; Levis & Pickering, 2004).

competences in language learning, namely speaking and its accuracy. Content-based language learning, that is, applying and using a foreign language in the context of specific subjects such as history, physics, or biology, represents a valuable option in modern foreign language learning and teaching and has been widely discussed in the literature (see, e.g., Dalton-Puffer et al., 2010; De Zarobe et al., 2011; Juan-Garau & Salazar-Noguera, 2015). Second, a kind of computer-based language learning is implemented in that our target group uses a software to monitor and improve their pronunciation and exchange their experience and gained knowledge via an online communication platform. Nowadays, technology plays a crucial role in the domain of language learning and teaching (see, e.g., Andujar, 2020; Buendgens-Kosten & Elsner, 2018; Thomas et al., 2013). Third, a well-balanced combination of tutor instruction, explorative-individual learning, and sequences of cooperative work is proposed and it is assumed that all of these distinct components contribute a positive part to the language learning process (see also, e.g., Archer & Hughes, 2011; Butzmann, 1998; Hollingsworth & Ybarra, 2013; McCafferty et al., 2006).

### 3 The Exercise

The specific exercise suggested here, which is based on the two tools Zoom and Praat, aims at improving the English pronunciation of German learners of English with a rather low competence in the target/foreign language. In particular, it is concerned with a well-known inaccuracy in the speech of German learners of English, namely the realization of the interdental fricative. Approaching this problem, our objective is to avoid potential communication issues and to contribute to a more native-like pronunciation of our learners. One example of a possible communication issue is the inaccurate production of homophones, as in the merging of two items into one. So, *mouth* and *mouse* are both produced as [maʊs], *thick* and *sick* as [sɪk], or *path* and *pass* as [pa:s]. The learners and the tutor meet online to conduct the exercise in the way outlined below. Our target group represents learners of English whose native language is German, who have still a low competence in English (A2 to B1), who have difficulties in accurately pronouncing the English interdental fricative /θ/, and who have never used Praat before. Further, they should be 15 years or older, should have had physics at school for a couple of years, and are familiar with basic acoustics, although the central aspects in the context of the present exercise are revised and discussed together. An example of a possible target group is a group of learners who were taught English at school, who never needed it in their job for many years, and who intend to work on their English competencies later in life. More precisely, the exercise might be used in an adult education center in Germany. These centers offer voluntary and chargeable evening classes on various foreign languages and contribute, in addition to regular schools, universities, etc., to the promotion of multilingualism, an important aspect of the German society. Online instruction was an exception in this educational area before the pandemic and the

exercise presented here might inspire others to develop new ideas. Note that the exercise is outlined step by step and with all details in mind that unexperienced Praat users need to understand the idea and the tool. To maximize the success rate of the exercise described in this chapter, the group size should be kept small, that is, there are ideally not more than 10 students. The primary language of the virtual classroom is English, but if students do not understand certain parts due to their rather low level in English, the German language can be additionally used to help.

### ***3.1 General Introduction to Praat***

Before Praat can be effectively used to optimize one's pronunciation of English, a thorough introduction to the software itself and its general functions relevant to the learning program is in order (see also, e.g., references given in Sect. 2.2). During this phase, the tutor or teacher guides the learners step by step through Praat, introducing general issues. For this, Zoom is used, which enables the tutor to speak to the students and share her or his screen to demonstrate functions in an easy-to-follow fashion. Of course, during this phase of explicit instruction, participants can intervene at any time, raise questions, and the tutor can repeat specific aspects upon request. Issues that are explained during the instruction phase are specified in the following paragraphs (see Boersma & Weenink, 2021).

#### **Step 1**

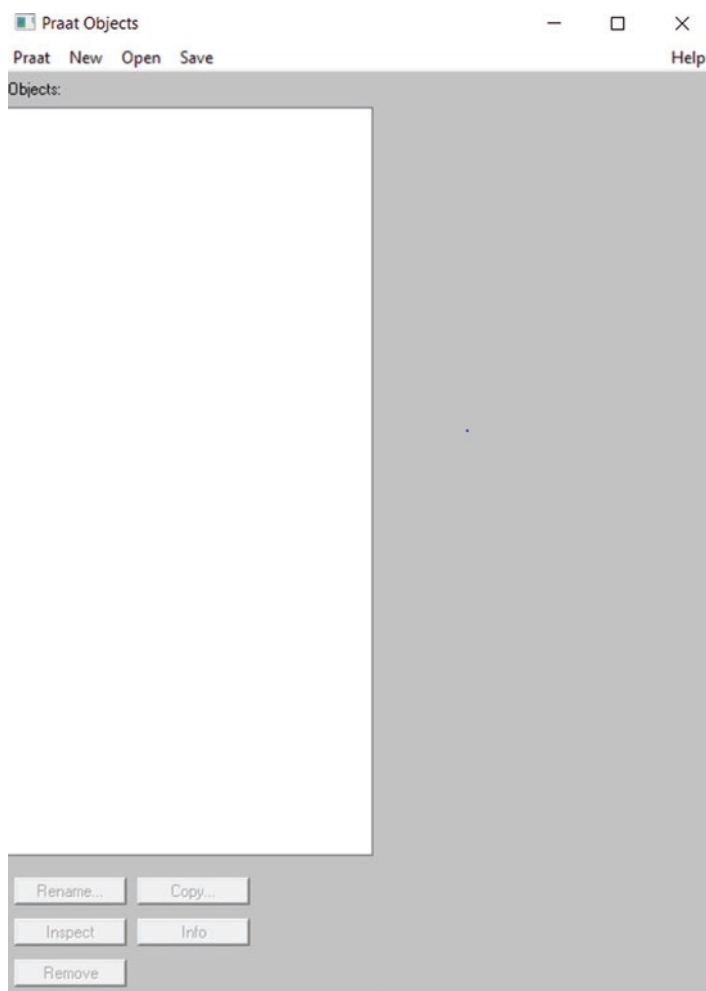
First of all, Praat has to be downloaded from the website <https://www.fon.hum.uva.nl/praat/>. The tutor explains that users are not charged any fees, select their operating system (e.g., Windows) as well as the appropriate edition (32 or 64 bit, this piece of information is found in the system information section of one's computer and the tutor must be familiar with this in order to help, if need be), and download and install the program within a minute. The tutor is available and can help if technical problems occur here or at any other moment during the exercise.<sup>2</sup>

#### **Step 2**

Praat can now be started and two windows open. One, called Praat Picture, is not needed for the present exercise. One exclusively works with the other window, called Praat Objects (see Fig. 1), which is shown to the participants of the course via the screen sharing function. It is stated at this step that Praat Objects represents the space where all sound files that one records or uploads from the computer appear. Furthermore, it is explained which tabs from Praat Objects are relevant to the current exercise and what they are used for; more details will follow at later steps.

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<sup>2</sup>I have been using Praat in my linguistics seminars for years and there has never been a serious technical problem. Praat is a very reliable tool that can be used by everyone if the necessary instructions are provided.



**Fig. 1** The very beginning: Praat objects

Learners will make use of the tabs *New*, *Open*, and *Save*. *New* leads one to an interface to record spoken language, which can be analyzed in Praat afterward. *Open* is used if one intends to upload sound files already available, for instance, files recorded with Praat at earlier stages. Clicking on *Save*, in turn, users select where and in which format the recorded materials are stored.

### Step 3

Assuming that our target group has never worked with Praat or a comparable recording platform, the tutor points the learners to the tab *New* and the subsequent specification *Record mono Sound* (see Fig. 2). This leads us to the SoundRecorder, in



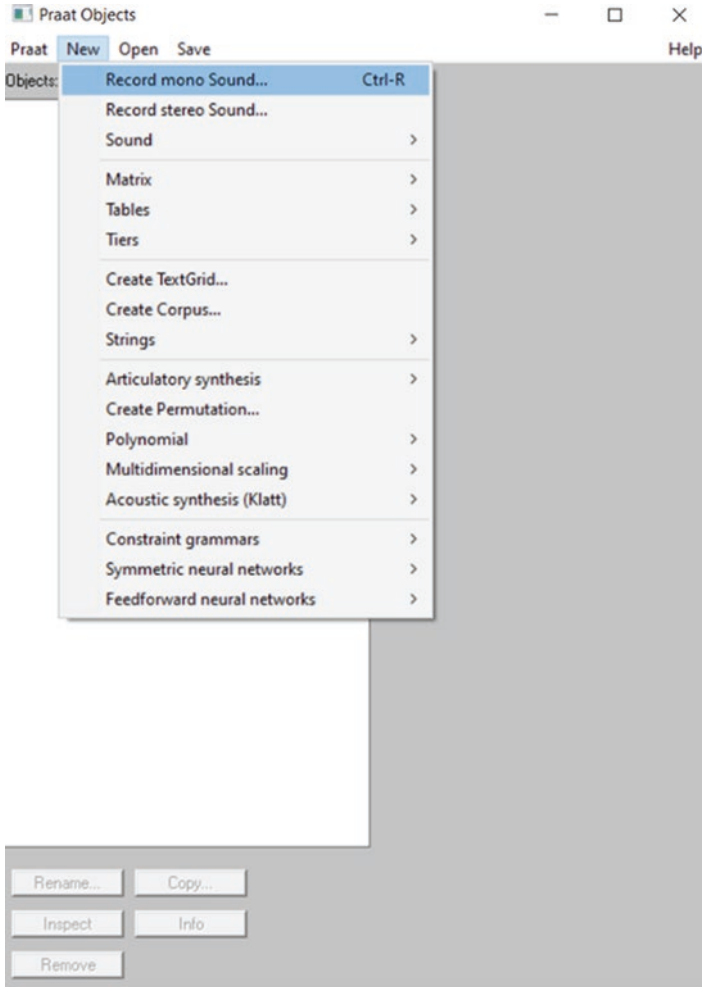
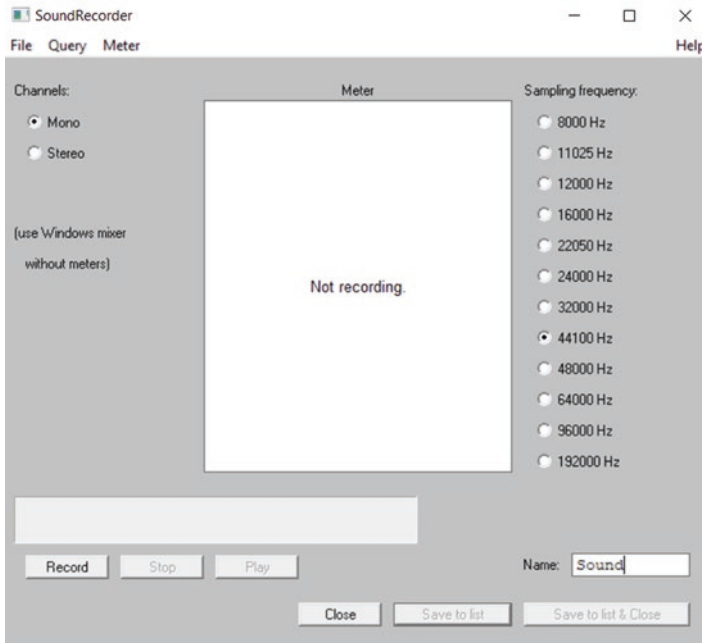


Fig. 2 Starting a new recording

which one records the English words, phrases, or sentences that are supposed to be analyzed at later stages (see Fig. 3). It needs to be mentioned that the channels specification *Mono* and a predefined sampling frequency of *44,100 Hz* are adequate (without further details on why). Users choose the name of the sound file and fill it in the cell in the bottom right corner in Fig. 3.

#### Step 4

It is now possible to record sound with Praat. To record a sound file, users must be in a quiet environment. At this step, one clearly sees one major benefit if the current exercise is completed online. Of course, some parts of it could also be conducted in a



**Fig. 3** Recording a new sound

classroom, but for the present step, the online scenario brings an important advantage. That is, it is much more likely to find a silent place at home in comparison to a classroom or school. Even if family members or others are at a person's home, too, it should be manageable to guarantee that the recordings are realized in a quiet environment. This would be more difficult in a classroom or school building, where several students are present at the same time and cannot record simultaneously in the same place. Since recording is necessary several times during the exercise, the virtual space offers a unique opportunity to improve one's competencies in English in a timely and efficient way. Everyone can record on her or his own and can then easily join the entire group again.

The tutor illustrates the recording process by emphasizing the following issues. To record, press the *Record* button, produce the respective word, phrase, or sentence, press the *Stop* button, and press *Save to list*. During the recording, the meter should remain green, which is the case if speakers realize speech at a normal volume (see Fig. 4). Figure 5, in turn, shows an example where a speaker screamed and the meter reached yellow and even red areas; this needs to be avoided in the exercise.

Having clicked on *Save to list*, the sound, simply called *Sound* here, appears in Praat Objects (see Fig. 6). Saving the sound file to one's computer is an essential step, since Praat does not automatically do that. Clicking on *Save*, then *Save as WAV file*, and choosing a folder to store the materials does the job (see Fig. 7).

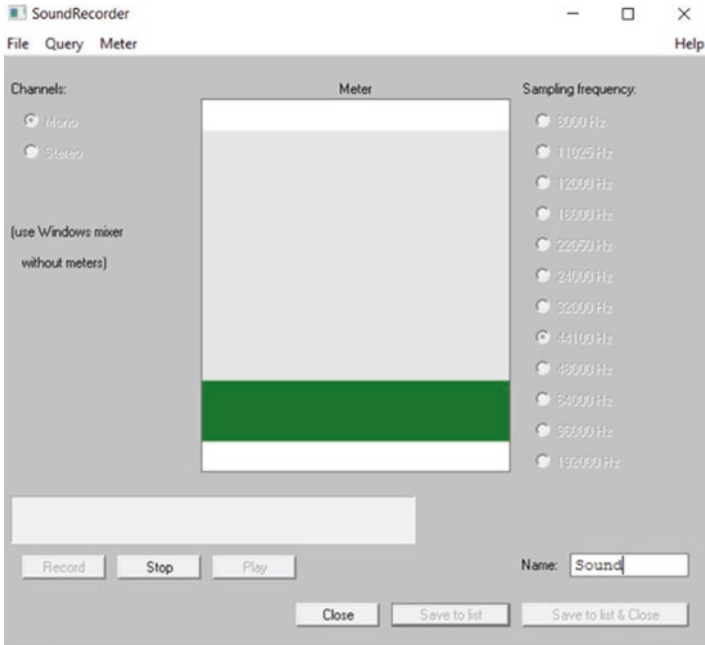


Fig. 4 Meter if the volume is good

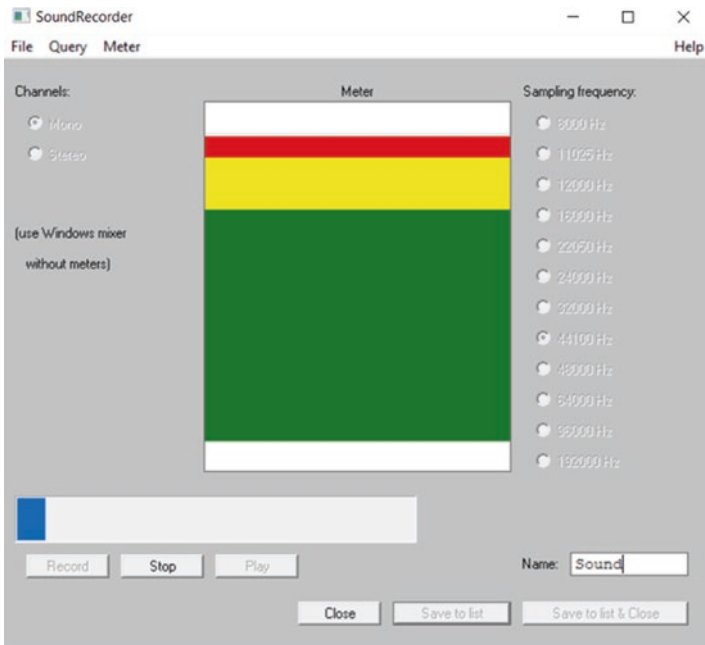


Fig. 5 Meter if the volume is too high

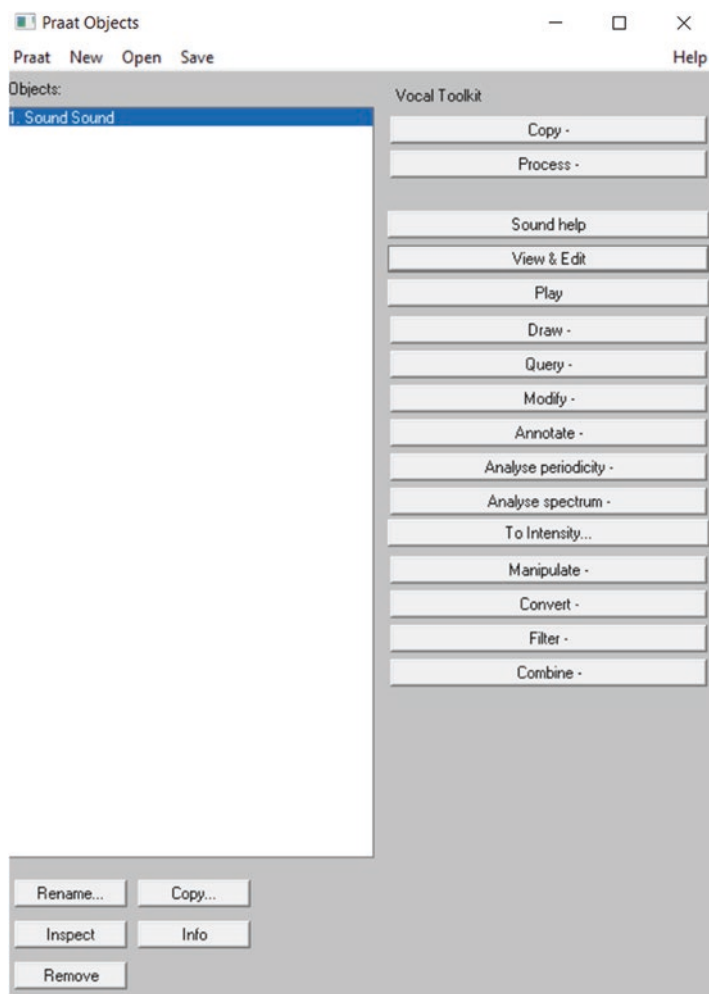


Fig. 6 Recorded sound (not saved)

### Step 5

Next, the tutor shows how one can listen to and visually inspect a sound file by explaining the following aspects. Selecting *View & Edit* on the right side of Praat Objects, one sees the visual representation of the recorded sound. The two decisive visualizations given in Fig. 8 are the waveform on the top and the spectrogram below, specifically for the word *pin*, which was randomly selected as an example (see, e.g., Boersma, 2013). The waveform plots the air pressure (y axis) and the time (x axis). That is, one observes the variation of air pressure – the result of varying articulatory effort – as the word is realized step by step (see, e.g., Ebert & Ebert, 2010; Hoffmann, 2010; Reetz, 2003). The spectrogram, in turn, visualizes frequency (y axis) and time (x axis); in addition, one sees brighter and darker shading, indicating more or less intense frequency areas

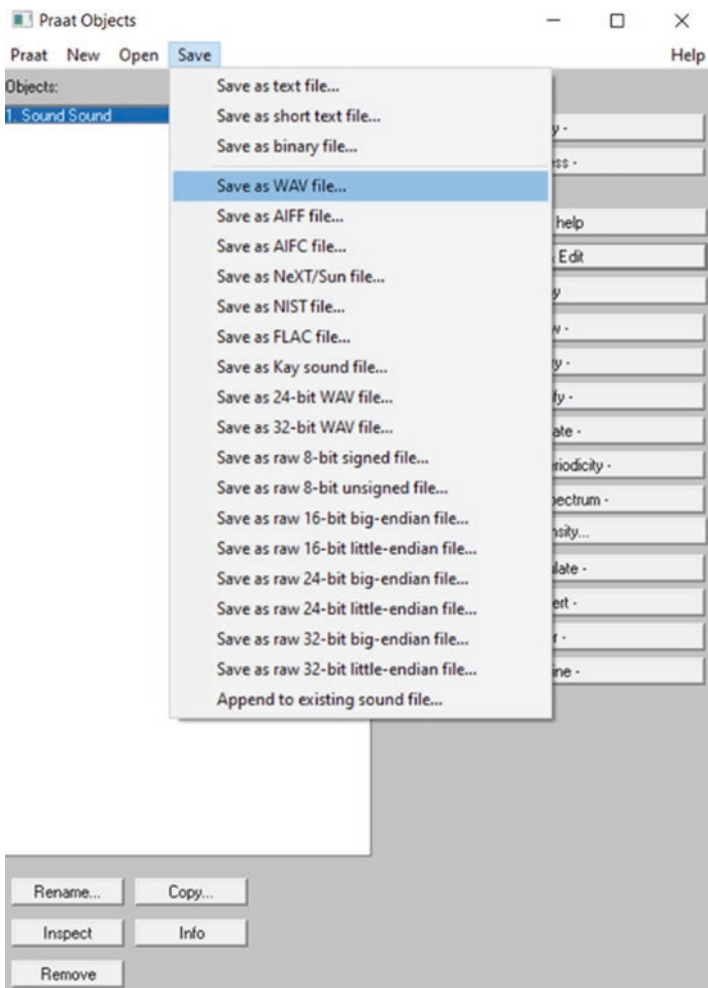


Fig. 7 Saving a recorded sound

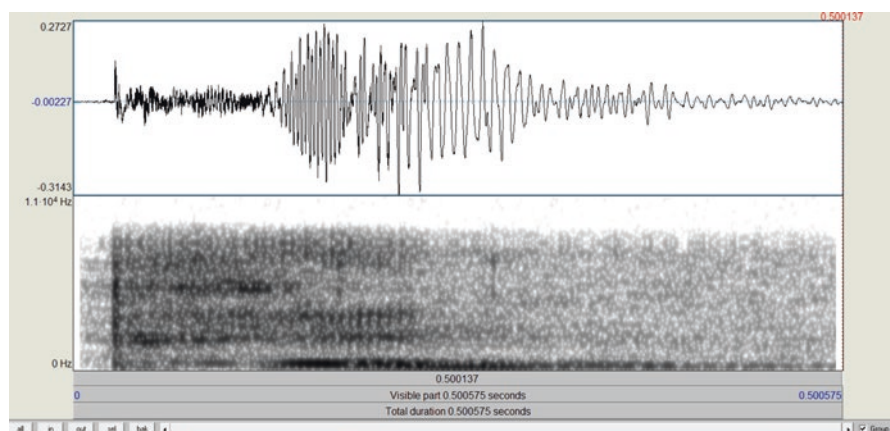


Fig. 8 The word *pin* visualized in Praat

(see, e.g., Ladefoged, 2003). Crucially, one cannot only examine the entire word using the waveform and spectrogram, but one can also zoom in to a specific part of the word. After the listening orientation, the learner can mark the area of interest with the cursor (see Fig. 9) and zoom in using the *sel* (selection) function in the bottom left corner. The selected part is enlarged in Fig. 10. Note that you can listen to a part by clicking on the field where the duration is specified. For instance, if one clicks on “0.500137” in Fig. 8, which is the total duration of the sound file (about 500 milliseconds), one hears the entire file. If you click on “0.050922” in Fig. 9, one hears only the selected part of the file, shaded in red. At this stage, it is important that learners are exposed to the two visualization types and are taught their basic idea. Reading and interpreting these figures requires experience and specific exercises. Therefore, we go into more detail in the exercise steps presented below. After this general introduction to Praat by the tutor,

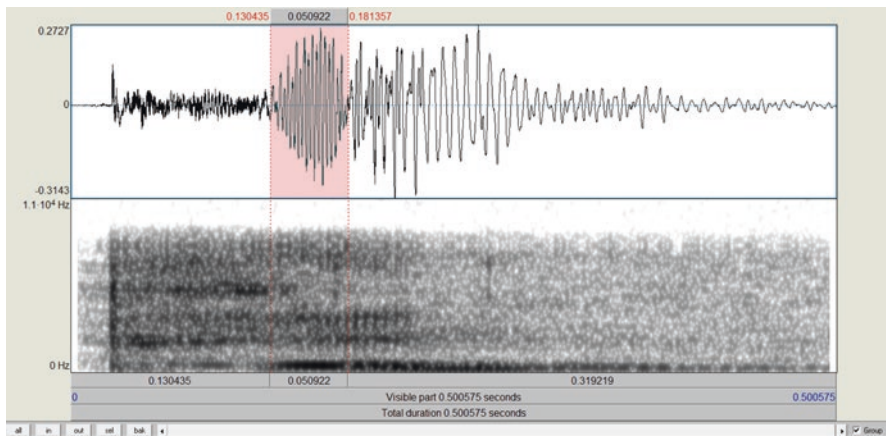


Fig. 9 Figure 8 again, with the red shading representing the selected portion

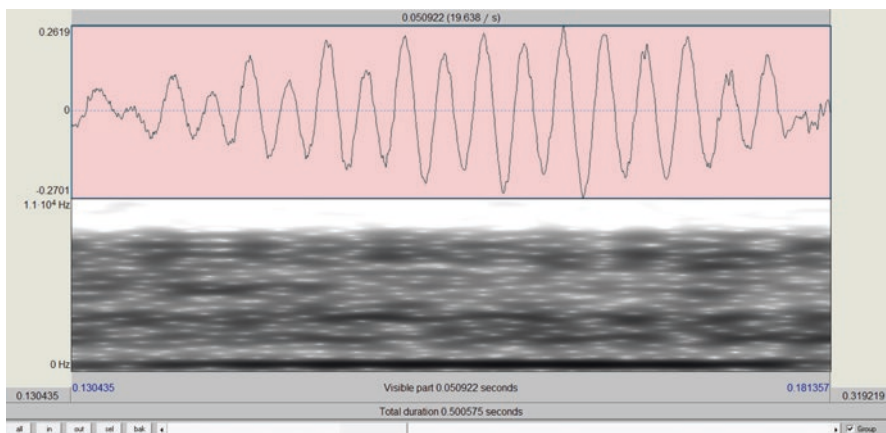


Fig. 10 Enlarged version of the selected portion from Fig. 9

one is now ready to proceed to the specific exercise. The Praat functions needed for the exercise and the role of the tutor and the learners are outlined in detail below.

### 3.2 *The Specific Exercise*

The suggested exercise has the objective to optimize the pronunciation of a specific group of English consonants, namely voiceless interdental fricatives. It is well known that English interdental fricatives, as word-initially in the word *think*, which are not part of the German phoneme inventory, often represent a source of inaccuracy in the realization of German non-native English. Typical mispronunciations include replacing the interdental with an alveolar fricative, producing homophones for *think* and *sink* (see, e.g., Hickey, 2020). Relying on Praat, the auditory judgment, the visual representation, and mathematical calculation of the acoustic properties of fricatives, the current exercise helps notice the potential inexactness in pronunciation, or, in the positive case, reassures learners that the production is already adequate.

#### Step 6

The tutor instructs the students to read out and record the passage below. In order to ensure an unconscious and unfocused expression of the target fricatives, learners are requested to read and record a short text passage – and not just single words – containing tokens of the interdental and alveolar fricative. Doing so, learners do not immediately realize the purpose of the exercise and one can collect real and undistorted data. The precise formulation and text passage are given in (1) and are sent out by the tutor via email. We are specifically interested in the words *Miss* versus *Smith* and *sink* versus *think*. The words contain either the voiceless alveolar ([s]) or the voiceless interdental fricative ([θ]), once in syllable-initial and once in syllable-final position. Note that the words *Miss* and *Smith* on the one hand and *sink* and *think* on the other hand are embedded in comparable positions and structures in order to keep the environment, which might affect the articulation of speech sounds, as constant as possible. Relying on the information described in Sect. 3.1, learners are capable of recording and saving a sound file in and with Praat. The passage is read three times to ensure that, in the case of potential slips of the tongue or hesitations during the reading process, learners have at least one file to work with for each test case.

1. *Read out the following text passage at a comfortable pace and record and save this using Praat. Read this passage three times and save each version in a separate file. If you have a good external microphone, use this; if not, the microphone of your computer is fine as well.*<sup>3</sup> *You have 5 minutes to do so.*

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<sup>3</sup>Note that the use of the computer microphone is acceptable for our purpose. On the one hand, it would not be possible to equip all learners with expensive microphones. On the other hand, the general and relevant patterns needed for this specific exercise are also observable in sound files recorded with the internal microphone of a computer.



Before Miss Miller left the house, Mister Smith had called her. He told her that the boat would sink soon and that they would have to think about a new one.

### Step 7

Once the recording has been saved, learners receive a sound file via email from the tutor containing the passage read by a native speaker of English, which contains the aspects one is interested in and which serves as a comparison. They are asked to work on the following task (see 2).

2. *Now, consider both your own recording and the recording from the English native speaker in Praat. Listen to the files and use the View & Edit function. Please focus on the words Miss, Smith, sink, and think; you can ignore the other parts. With respect to the native speaker's sound file, do you notice similarities and differences between the final sounds in Miss and Smith in the waveform and spectrogram? What about the initial sounds in sink and think, are there any comparable or distinct patterns that you see? Can you observe the same patterns in your own recordings or does your production look quite different? Work on your own first (15 minutes), before discussing your findings with a partner online (15 minutes).*

The exercise asks learners to explore the phenomenon on the basis of the sound files and to detect the acoustic characteristics of the segments in focus. Crucially, sound files from a native speaker of English are provided to give the learners an idea of how it is supposed to look like. Note a general aspect here. It is clear that even among native speakers of English a lot of variation in pronunciation exists. This variation can be due to several factors, one being the variety of English (e.g., Canadian, Scottish, Australian) someone speaks. Therefore, before a native speaker reads the text passage, the tutor has to ensure that the person adequately produces the distinction between the [s] and the [θ]. The distinction is actually realized in most native varieties of English, with a few exceptions (see, e.g., Hickey, 2008). Let us assume for the sake of the argument that the realization of a learner's [θ] is inadequate, specifically, that the learner produces an [s] at the beginning of *think*, not the [θ]. In this situation, there is a clear contrast between the native speaker's and the learner's files: the recorded target words (e.g., *sink* versus *think*) should look dissimilar for the native speaker but similar for the learner. While Fig. 11 below shows the waveform and spectrogram of the English word *sink* in Praat, Fig. 12 represents the word *think*. The two words are correctly produced, and the visualizations mirror these accurate realizations.<sup>4</sup>

### Step 8

Obviously, learners vary with respect to how many details and how much information they find themselves during the phases of individual and partner work. It is assumed here that the students have difficulties in interpreting the waveform and

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<sup>4</sup>Note that an example of an inaccurate production of *think* is not given since the general and relevant patterns in the waveform and spectrogram were identical to those given in Fig. 11.

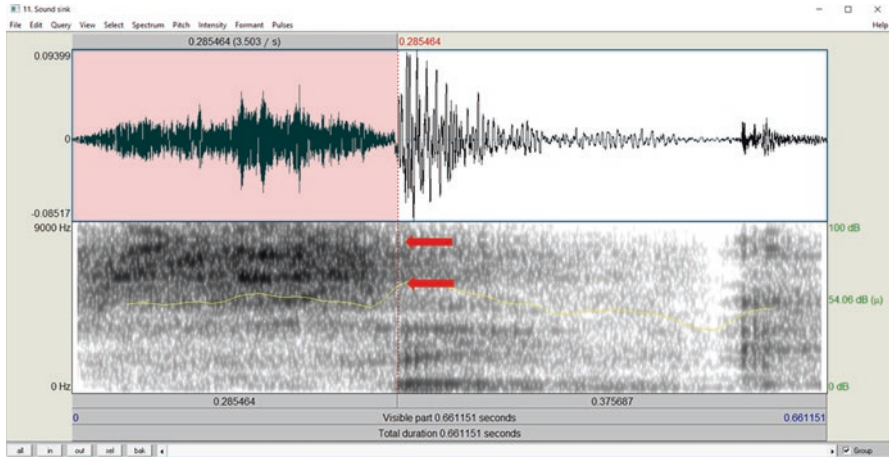


Fig. 11 Visualization of the acoustic properties of *sink*

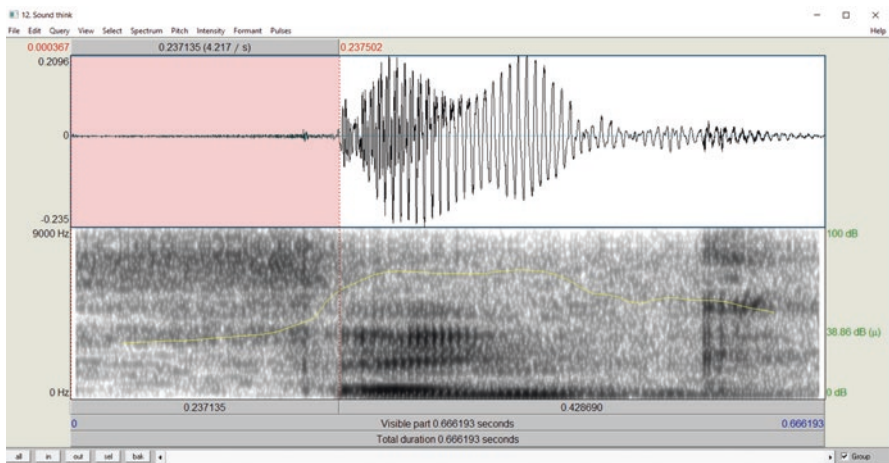


Fig. 12 Visualization of the acoustic properties of *think*

spectrogram and in comparing their own sound files to the file with the native speaker data. Therefore, a thorough and profound follow-up discussion is of utmost significance. The tutor guides the learners through the phenomenon in a step-by-step manner, focusing on the following aspects.

The [s] serves as a kind of baseline, since it is a common sound not only in English but also in German, and learners are therefore expected to produce it accurately. Hence, typical patterns of this fricative are pointed to in the waveform and spectrogram. The articulatory and acoustic characteristics of fricatives are described in detail in the literature (see, e.g., Ladefoged, 2003; Ladefoged & Maddieson,

1996; Machač & Skarnitzl, 2009; Reetz & Jongman, 2009; Zsiga, 2013) and can be used as a theoretical foundation by the tutor. First, fricatives are realized with a slight constriction at some place in the oral cavity, which creates turbulences when air goes through this narrow passage. The turbulences, or fricative noise, are clearly mirrored in the waveform (see the black oscillations crossing the x axis in the portion shaded in red in the waveform of Fig. 11). This represents the first feature of fricatives visible in Praat. The fricative noise of the [s] in *sink* is shown in Fig. 11. Second, one can recognize the [s] in the spectrogram, where it often features a specific structure. Most of its energy is located in the frequencies higher than 6000 Hz, for example, between 8000 and 9000 Hz (Ladefoged, 2003; see also Machač & Skarnitzl, 2009). Clearly, darker regions indicate the increased energy and this is visible, roughly, in the area between the two red arrows in Fig. 11.

### Step 9

Now, having considered some general aspects of fricatives and the [s] is particular, the next decisive question is how the [s] can be acoustically differentiated from the [θ]. Here, again, the tutor needs to help, relying on the following issues this time. Generally speaking, while the [s] is a so-called sibilant, producing high-pitched and loud noise as a result of the airflow hitting the teeth, the [θ] is not a sibilant and characterized by a noise that is lower-pitched and less intense (Zsiga, 2013, see also, e.g., Beňuš, 2021; Yavas, 2016). This difference is visible in Figs. 11 and 12 in two ways. For one, the amplitude in the waveform, that is, the positive and negative excursions of air pressure on the y axis (Ebert & Ebert, 2010), is more extreme for the [s] than for the [θ]. Second, it is possible to use an intensity analysis (see, e.g., Styler, 2021). The yellow line, once in Fig. 11 and once in Fig. 12, reflects the intensity of the speech sounds and mirrors the aforementioned difference between the [s] and the [θ], that is, the line is higher for [s] than for [θ], which one expects due to the louder noise of the former. To “transfer” the yellow line into a more objective and detailed intensity analysis, one can make use of Praat’s intensity calculations. To do so, one selects the two fricatives with the cursor (see the red shading in Figs. 11 and 12). Note that the segmentation of speech can be a complex task, for which one needs solid criteria to state when one segment ends and the next begins. Separating fricatives and vowels, as in our cases here, is usually one of the easier segmentation scenarios (see, e.g., Ladefoged, 2003; Machač & Skarnitzl, 2009; Turk et al., 2006). To mark the end of the fricative, and therefore the beginning of the vowel, one can rely on the clearly distinct pattern of the waveform. For one, vowels show higher amplitudes in the waveform than fricatives, as can be seen in Figs. 11 and 12. Further, in contrast to the fricative noise described above, vowels are characterized by a (relatively) regular repetition of waves. To recognize this, select the portion shaded in red in Fig. 13 and then click on “sel” to enlarge this part, with the enlarged version given in Fig. 14.

On the basis of Fig. 13, a very rough marking of the boundary between the fricative and the vowel, and Fig. 14, one can set the boundary at the position of the cursor in Fig. 14, that is, at the red vertical dotted line, which marks the beginning of the

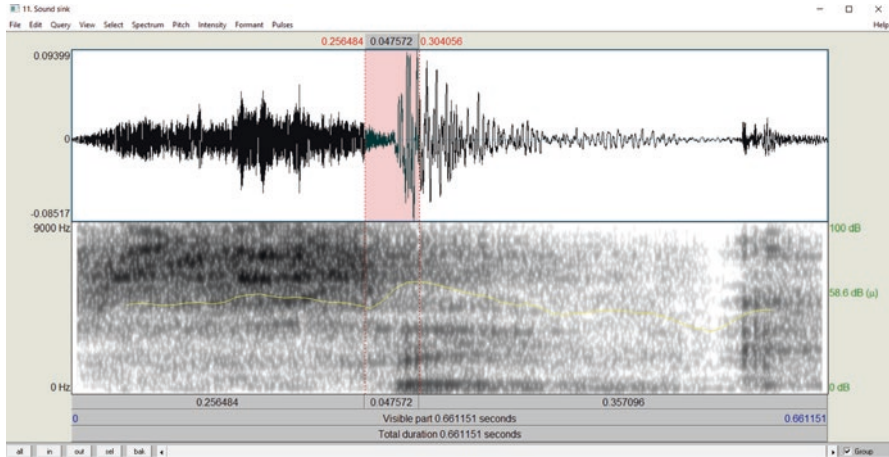


Fig. 13 Detecting the boundary between the fricative and the vowel: Part I

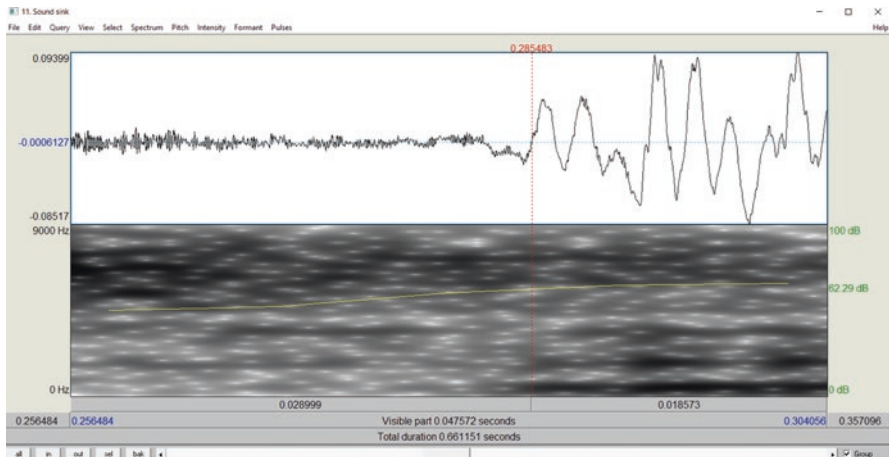


Fig. 14 Detecting the boundary between the fricative and the vowel: Part II

more regular pattern and the higher amplitudes in the waveform. The boundary is set at a zero crossing. Note that there are also indications about where to place the boundary in the spectrogram if one zooms out again (see Fig. 15). One clearly sees that the patterns in the spectrogram to the left and the right of the cursor position (red vertical dotted line) are distinct. On the left, in the fricative, one sees a greater amount of energy in the higher frequencies as explained earlier, which becomes fainter and fainter towards the boundary. On the right, in the vowel, one sees the black/dark horizontal stripes further down in the spectrogram, which start at the place of our cursor. These are referred to as “formants” in the phonetic literature and are a typical spectral characteristic of vowels (see, e.g., Reetz & Jongman, 2009).

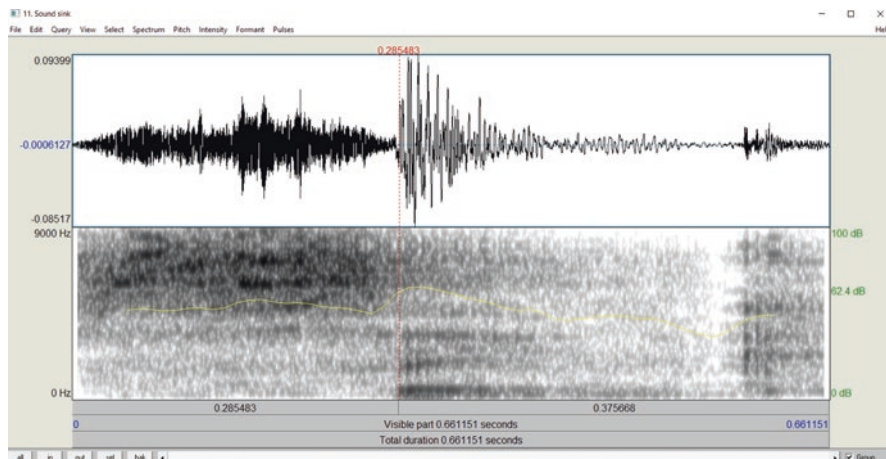


Fig. 15 Detecting the boundary between the fricative and the vowel: Part III

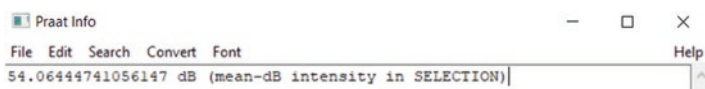


Fig. 16 Mean intensity of the [s] in sink

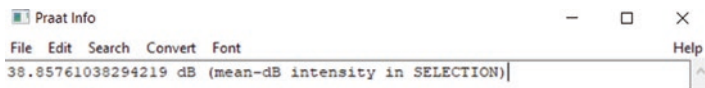


Fig. 17 Mean intensity of the [θ] in think

Having marked the boundary between the fricative and the vowel, one clicks on *Intensity* (see top menu in Fig. 15) and then on *Get intensity*. This gives you the average intensity of the two speech sounds, which is higher for [s] (54 dB, see Fig. 16) than for [θ] (39 dB, see Fig. 17).

The details described give learners a first objective and acoustic feedback about whether the realization of the interdental fricative is accurate. Of course, the pictures vary from person to person and from situation to situation to some extent, but the overall patterns should go in the direction just outlined.

Apart from the waveform and the intensity line, the spectrogram contains information on how the two fricatives [s] and [θ] differ. As can be seen in Fig. 12, the pattern of the [θ] in the spectrogram is clearly distinct from the pattern of the [s] in Fig. 11: the [θ] lacks the marked structure of the [s]. The [θ] is relatively faint and does not show the nuanced color distinction from one frequency area to the next, as expressed in the change from brighter to darker regions in the spectrogram of [s]

(see also, e.g., Varden, 2006).<sup>5</sup> So, if, for instance, an individual speaker's realization of the word *think* and in particular the interdental fricative [θ] looks more like the articulation of *sink* – in terms of patterns in the waveform, intensity line, and spectrogram – the speaker's pronunciation necessitates improvement.

### Further Steps (If Necessary)

Once the theoretical points have been discussed via Zoom, all those learners who still need to optimize their [θ] pronunciation will get additional practice phases, first on their own and then together with a partner, before consulting the tutor again. Relying on the productions of the learners, that is, the sound files along with the waveform and spectrogram, the tutor's task is to specify potential inaccuracies in the students' speech and explain the articulatory gestures of the tongue one needs to articulate an interdental fricative, and to contrast this to the known realization of an alveolar fricative. In a class of 10 students, this is done pair by pair in virtual breakout rooms (5 pairs of students). The separate parts of the online exchange (individual work, partner work, work with a tutor) can be repeated several times and are decisive to guarantee an appropriate balance between instruction- and practice-oriented learning sessions. For this, the sound files represent the basis, both for the tutor to derive feedback from her or his auditory and visual impressions and for the learner. Note again that the virtual space offers great benefits over classrooms and schools. Learners can record themselves as often as necessary in a silent environment at home, without being disturbed by others in the same room and without having to look for a quiet place outside the classroom at school.

## 4 Discussion

Improving learners' pronunciation represents one of the targets in the foreign language classroom, and a wide variety of tasks, exercises, and materials has been developed for this purpose (see, e.g., Low, 2015; Pennington & Rogerson-Revell, 2019). Among these, one finds some work on the use of the program Praat, a linguistic tool that can assist students during the learning process. In the present chapter, the focus has been on the potential mispronunciation of the interdental fricative /θ/ produced by German learners of English, who are still at a rather low level. Relying on the steps outlined in Sect. 3, learners can, on their own, together with a partner, or together with their tutor, take advantage of Praat's auditory and acoustic functions to monitor their own speech, compare it to the speech of an English native speaker, and to detect and subsequently improve inaccuracies. The approach described here combines different positive aspects and nicely fits the requirements of modern foreign language learning and teaching.

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<sup>5</sup> See also Glass and Zue (2003).



A major strength of our proposal is its direct applicability. All steps of the exercise are carefully outlined, including a thorough introduction to Praat and the relevant functions. This represents a clear advantage of the present work in comparison to many previous contributions, in which Praat's role in the foreign language classroom is described, but which miss providing a sufficient level of detail to ensure that learners who have never worked with the tool before can easily use it (e.g., Wilson, 2009). The implementation of clearly defined steps facilitates the learners' lives and helps them comprehend and improve pronunciation.

Moreover, and compatible with the scope of the present book, the online nature of the activity given in Sect. 3 enables learners to work on their pronunciation more flexibly than in a real classroom and in accordance with their individual needs. One ingredient of the exercise is, if need be, to repeat and record the production of the target segment (/θ/) in order to make progress. Since the simultaneous recording of different students represents a challenge in a real classroom, the virtual environment turns out to be a big plus for this exercise. Students will not disturb each other, and learners who need more practice can do additional trials and remain in exchange with the tutor.

Apart from these two positive characteristics of the exercise, there are at least three others. First, learners benefit, on the one hand, from the tutor's expertise during the discussion phases but can also, on the other hand, work autonomously and in cooperation with another peer during other parts of the exercise. Second, participants do not only improve their own pronunciation but also acquire (new) knowledge about the physics of speech, compatible with the idea of content-based language learning. Third, in our digital age, using technology in a specific area, such as foreign language learning, can represent an up-to-date and efficient way to make progress. That is, for instance, Praat offers visualizations to illustrate aspects of speech from a different, namely visual, perspective, which can help understand the accurate articulation of foreign language speech.

Different avenues for future research arise and two of them should be pointed out. For one, similar exercises could be developed for other phonetic and phonological aspects, such as the production of (difficult) vocalic, prosodic, or other consonantal issues. Such activities could target, again, German learners of English, but also learners of another foreign and/or with another native language. One example is the production of the English vowel /æ/, which is absent from the German sound inventory. A second route in future research might be to study systematically the effects such exercises have by collecting feedback from learners or evaluating learner speech before and after the completion of the respective task.

## 5 Conclusion

The current chapter has shown in detail and in a step-by-step manner how the phonetic program Praat can be used in the virtual foreign language classroom to analyze and improve one specific piece of English pronunciation. We hope that learners and



teachers can directly benefit from this paper and, by the same token, that other researchers take our work as inspiration to develop similar activities for other linguistic aspects and languages.

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# Developing L2 Reading Skills: The Advantages of Teacher-Algorithm Collaboration in Digital Learning Games



Roger Gilabert, Matthew Pattermore, and Judit Serra

**Abstract** Reading in an L2 is a complex skill that has been claimed to be facilitated by serious games. Serious games in online environments have the potential to draw learners' attention to language and to personalize learning. This innovation experience presents a serious game that uses an algorithmic sequence for the presentation of linguistic units for the acquisition of reading skills. The game also gives teachers the opportunity to alter the algorithmic path. The goal is to explore gameplay behavior and teachers' perceptions of adaptivity and learning. 105 students played games for over 4 months and 7 teachers participated in the training and interviews. This study draws both on quantitative data coming from gameplay, and qualitative data coming from teacher interviews. Results show that the algorithmic sequence triggered a wider variety of features played from basically grapheme-phoneme correspondence. Teachers used the teacher tool to cover a more limited variety of features but from a wider range of linguistic dimensions and with more games per feature. Data from interviews suggest that teachers had a range of perceptions regarding the connection of the tools to their own goals, they noticed and applied adaptivity, and they saw the learning potential of adaptive technologies.

**Keywords** L2 reading skills · Game-based learning · Serious games · Algorithmic sequencing · Adaptivity · Digital learning games

## 1 Introduction

Reading in a second or foreign language is a complex skill that requires long periods of training before it is mastered. In recent years, games have caught researchers' and educators' attention (Yu, 2019) because of their potential to gear attention to the

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processing of content that is relevant to the development of language in general and reading skills in particular. In addition to maintaining all the attractive elements of video games, serious games have the potential to feed educational content that may have a positive impact on players' knowledge and skills development. In this mixed-methods study we address the issue of how the sequence of the contents presented to learners, either through an algorithmic sequence with an adaptive component or a teacher-led sequence, may cause changes in gameplay and in reading development. The study brings together concepts from the areas of game-based learning and second language acquisition, with a main focus on reading development. We are also interested in teachers' appropriation of technology and how teachers may have perceived the issues of game design, adaptivity, and learning in the context of a serious game *Navigo: Pyramid of the Lost Words* as part of the European Union's Horizon 2020 innovation program *iRead* project.

## ***1.1 Literacy Skills***

Reading acquisition is a crucial skill for language as well as overall cognitive, academic, and social development. The abilities involved in reading have been claimed to be genetically endowed (Van Bergen et al., 2018) and as such, they show enormous variability among children. Also, there is general agreement that reading is one of the most complex and demanding tasks children are expected to master (McDonald & Weston, 2016). Reading development typically affects all areas of academic progress by children, since reading is involved in most other subjects in the curriculum. Ultimately, reading contributes to our personal development and normal functioning in society.

Reading comprehension is an acquired skill that combines a series of innate component skills and processes, and it requires extensive periods of training before it is mastered (Cain et al., 2015; Nassaji, 2011, for L2 reading). Top-down strategies typically activate prior knowledge in order to make sense of a text, mostly by guessing the meaning and making inferences of the reading material. Readers activate their prior experience and background and/or world knowledge in order to comprehend the text. Top-down models are driven by concepts and rely on what readers bring to the text (Abbott, 2010; Block & Israel, 2005). Bottom-up strategies required by reading include decoding and listening comprehension skills, by which graphic materials are transformed into phonological representations before meaning activation occurs. As opposed to shallow systems (e.g. Spanish), English is a deep system in which grapheme-phoneme correspondence rules are highly inconsistent (Defior et al., 2008). In a continuum of opacity-transparency, English can be clearly considered an opaque language. As such, learners need massive amounts of exposure to grapheme-phoneme correspondences and many opportunities for practice for awareness of such correspondence 'rules' or associations to be raised (Pattamore et al., 2019).

When it comes to digital reading, the idea that the higher the amount of exposure the larger reading development has not been sufficiently tested. From a theoretical point of view, Deligiannis et al. (2019) have suggested that adaptive serious games have the potential to continuously adjust to the individual skill level of the learner. As opposed to more static traditional activity books, serious games are more dynamic and interactive in nature, allowing unlearned concepts to be revisited in a different format or activity at a later time. In this paper we focus on the amount of exposure and practice in a digital, adaptive serious game as determined by the type of sequence, whether algorithmic or teacher-led. We explore whether and how it may explain the acquisition of reading skills with a focus on bottom-up processing strategies related to word reading, non-word reading, and reading fluency.

## 1.2 *Serious Games*

As suggested by Djaouti et al. (2011), serious games maintain all game characteristics but their primary goal is educational rather than pure entertainment. It is well known by now that for games to attract players' attention they need to have certain combinations of attractive aesthetics, as well as clever mechanics that will cause engaging dynamics. Serious games in online environments have been claimed to afford advantages for language learning (Gee, 2005; Sørensen & Meyer, 2007). Central among these claims is both the ability of games to draw learners' attention to language as they are deeply engaged in gameplay and the possibilities within the digital medium to personalize learning to a higher degree than more traditional language teaching approaches allow (Holmes et al., 2018) and hence the use of serious games has shot up dramatically in recent years (Vaala et al., 2015). A commonly accepted realization is, however, that getting the player's attention and raising their interest in gameplay do not secure learning, and so certain combinations of variables need to be created for any learning to take place. In the area of reading skills, there is only a scarce literature on how games may contribute to learning. For example, outside games, the development of fluent reading has been associated with higher "print exposure" (Cunningham & Stanovich, 1997; Van Bergen et al., 2018), but it is still debatable and few empirical studies have shown whether this also applies to digital serious games.

In educational contexts reading is typically both a group experience (whole class reading) as well as an individual one (silent reading). One of the challenges with reading is that reading skills are acquired at different paces by each learner in accordance with learners' abilities and internal syllabi for language acquisition. As a possible solution to such a challenge, more recently serious games have begun to include complex adaptive algorithms in an attempt to personalize the learning trajectories of game users. As an instantiation of the more general and still debatable concept of personalization (Vanbecelaere et al., 2020), adaptivity in a system seeks to adjust instruction on the basis of learner abilities and/or preferences in order to act upon identified learner characteristics and improve the efficiency and efficacy of

learning (Oxman & Wong, 2014; Vandewaetere et al., 2011). This may happen at any particular point in the instructional process and it may entail the automatic adaptation of multiple game elements such as content, user interfaces, game mechanics, or game difficulty. Such adaptations customize or personalize the interactive experience (Streicher & Smeddinck, 2016; Holmes et al., 2018). As a consequence of such customization and adaptivity, some scholars have suggested, learning can potentially be faster and more effective. The claim, however, needs further empirical testing and support. As further described in the methodological section, in this study we used the game *Navigo: Pyramid of the Lost Words* as part of the European Union's Horizon 2020 innovation program *iRead* project in order to improve the fluency and accuracy of reading of L2 learners.

### 1.3 Algorithmic vs Teacher-Led Sequence

Algorithmic sequences make use of the concept of personalization and adaptivity as its instantiation in order to test the effectiveness of adaptive reading games on reading acquisition. So far some studies looking at reading accuracy and fluency have returned mixed results (Vanbecelaere et al., 2020; Kartal & Terziyan, 2016; Van de Ven et al., 2017). Some studies have shown students in the algorithmic sequence outperformed the students in a non-algorithmic sequence in some dimensions (letter-naming and phoneme segmentation in the case of Kartal & Terziyan, 2016) but not in others. A recent study by Vanbecelaere et al. (2019) revealed that participants playing both an adaptive reading game or the same game without the adaptive component significantly improved from pre-test to post-test on phonological awareness and letter knowledge. Other studies have found clearer positive effects on reading skills of the adaptive component. Kyle et al. (2013) stated that participants playing two adaptive literacy serious games outperformed those not playing in reading, spelling, and phonological skills in a pre-test/post-test design. They found an effect of serious game play in reading fluency and pseudo-word reading with no effect on decoding. Sampayo-Vargas et al. (2013) used an adaptive game that achieved significantly higher learning outcomes involving L2 cognates. Finally, other studies suggested that groups that used adaptive systems achieved significantly better reading comprehension for both L1 and L2, particularly in low attainment children (Camacho & Esteve, 2018; Ching-Kun et al., 2013).

As opposed to algorithmic sequences, in traditional approaches teachers and/or syllabus designers determine the selection and sequence of units by typically applying some notion of increasing difficulty based on curriculum guidelines, teacher training, intuition, and experience (Long, 2015). In such approaches all learners in a course are presented the same linguistic items simultaneously in a one-size-fits-all fashion, regardless of their previously acquired knowledge and whether they are developmentally ready to learn a given linguistic feature (Pieneman, 1989; Long, 2015). In technologically-oriented teaching, Camacho and Esteve (2018) have suggested that there is insufficient research dealing with the real direct impact of



technology in the learning process. There is also insufficient research dealing with the issue of sequencing and the exact criteria that should guide sequencing (Baralt et al., 2014).

As for teachers' perceptions, and as suggested by Bunting et al. (2021:1), limited research so far has been devoted to the adoption of technology by a teacher from the teachers' perspective itself: "Unfortunately, there is still a scarcity of studies on teachers' views surrounding personalized learning technologies, and especially related to their needs, hopes, and fears. Especially, there is lack of such studies focusing on the teachers' needs with regard to such systems." To our knowledge, no studies have looked at the perspective of teachers in the context of reading games with an adaptive component.

## 2 Research Questions

Our research here was motivated by two main questions:

1. How are gameplay experience and learning affected by the algorithmic, adaptive sequence as opposed to a teacher-led sequence?
2. How are game design, adaptivity, and learning perceived by teachers?

## 3 Methodology

### 3.1 *The Context*

*iRead* is an innovation project funded by the EU (grant agreement No 731724) promoting the creation of infrastructure and tools for the promotion of reading skills in different languages (English, Spanish, Greek, German, EFL) among 6000 primary school students in Europe. Its main aim was to develop innovative learning tools for personalized learning that included an adaptive component. Three applications were included in the system (games, e-reader, and a teacher tool) designed to be used with tablets, and the system was integrated into regular classroom practice. An adaptivity algorithm integrated into the system was used to generate individual paths that varied depending on the number of errors learners made with each feature and the number of games that they played as a consequence of that. Two major tools were developed in order to make it possible for the system to operate: a domain model that contained all language features to be worked on by players in the game, and it established the language difficulty and pre-requisites for each feature as suggested by a panel of language experts and experienced teachers. The consequence of setting up the features in growing difficulty was that players found easier features earlier in the game. Players were presented with a small number of open features with a similar level of difficulty at a given time. When learners mastered a feature,

the system unlocked the next more difficult features as per the domain model. The second tool was a 19,000-word dictionary specifying all phonological, orthographic, morphological, morphosyntactic information for each of the words. The words were called by the games as each learner progressed through the system and in accordance with the domain model specifications.

### 3.2 Participants

Regarding the users of the system, 106 English as a foreign language (EFL) students in sixth grade coming from 5 different schools participated in this study, and they were pulled out of a total of over 700 students participating in the iRead project in Catalonia and Aragon (Spain). Learners in Aragon were monolingual and they were bilingual in Catalonia, and they were all in a context where multilingualism is promoted according to Council of Europe language policies. Schools reported that they had not used games for language learning systematically in their EFL classes. Although all students used the iRead system, because of the conditions imposed by the world pandemic only 105 took pre-tests and post-tests about their reading skills (Table 1).

As for teachers, 7 all-female teachers coming from 5 of the 8 participating schools were willing to participate in the interviews about their use and impressions of the iRead infrastructure by themselves and their learners. Information about their ages was not requested but it ranged from the early twenties to late fifties. They were all Spanish nationals, trained and certified primary school teachers specializing in EFL teaching, with various levels of experience (2–30 years). Schools were either public (fully state-funded) or free schools (private with partial state funding) (Table 2).

**Table 1** Student participants' characteristics

EFL students ( <i>n</i> = 105)				
School	1	2	3	4
Number of students	51	31	7	17
Gender	29 male 22 female	18 male 13 female	5 male 2 female	7 male 10 female
Sequence	27 algorithmic 24 teacher-led	19 algorithmic 12 teacher-led	7 algorithmic	17 algorithmic

**Table 2** Teacher participants' characteristics

EFL students ( <i>n</i> = 105)					
School	1	2	3	4	5
School type	Free school	Free school	Public	Free school	Free school
No. of teachers	–	3	2	1	1

### 3.3 *Design*

In our context, schools were selected and contacted after an open call to schools. In our context 3 h of English need to be guaranteed per week. Typically schools follow traditional grammar-oriented course books 2 h per week and devote a third hour to reading, video watching or other projects in English. 8 schools participated in the whole iRead project over a period of two academic years. All schools agreed to integrate The iRead system into their regular EFL classes – 1 h out of three EFL classes per week – and they included the Navigo games app (from which our data come), the interactive Amigo e-reader, and the Teacher Tool. Through professional development sessions either in person or remotely, teachers were trained in the use of all three tools in face-to-face meetings with researchers before the pandemic, and online meetings once the pandemic hit schools.

During the weekly iRead class, learners were encouraged to play both the games and use the e-reader in project-supplied tablets. Games were included in the Navigo app installed on Android tablets. Contextualized in an Egyptian setting and with a simple but attractive narrative, in which every student created his or her own avatar, the game generated and maintained engagement (see Lawson & Lawson, 2013 for general task engagement; Holmes et al., 2018 for engagement in serious games). Interest and engagement were guaranteed through action, variety, emotion, music, colors, rewards, and all kinds of game elements that kept learners focused on solving the mini-games. For most features, pre-recorded feedback ranging from direct to indirect was provided (Pattimore et al., 2019) which appeared after each error. All games were designed to consider language choices in order to solve mini-language puzzles. The games included 13 different mechanics associated with the over 270 phonological, morphological, and syntactic features of the English language generating thousands of combinations. The Amigo e-reader app included texts and a voice system that read each text so that learners could connect word forms to their phonological form as well as other interactive features. Learners could check out the meaning of words by tapping on them and creating their own list of ‘tricky’ words. Learners in the five schools played a total of 11,791 games during the 4–5 month period, and read a total 3238 stories and recorded 923 tricky words.

As for sequence (see Serra & Gilabert, 2021 for further details) three teachers agreed to split their groups into an algorithmic sequence where contents were chosen by the system and a sequence which they could decide on by themselves. Among the remaining teachers participating in iRead the overwhelming choice was for teachers to let the algorithm choose the games for each student.

### 3.4 *Adaptivity*

All the language features included in the game (e.g. ‘-ce’ as /s/ in grapheme-phoneme correspondence, the prefix ‘multi’ or ‘-ed’ as an inflectional morpheme, attributive and predicative adjectives or relative clauses in syntax, among up to 270

features) were described in the domain model for language difficulty and prerequisites, which were decided upon item by item by a panel of language experts. Therefore, easier features would appear earlier in the game and the player could only be presented with a limited number of open features. The adaptive algorithm computed the player's performance on each mini-game in terms of the number of successes and failures and adjusted to the pace of each learner. The adaptivity component took into account the pre-requisites for each feature in order to present features in increasing difficulty during gameplay and the level of feature mastery was set at 70% of success having played a minimum amount of three times on the same language aspect. The system made use of Exponential Moving Average (EMA), which utilizes  $n$  past attempts with reduced weights (from starting value (5)  $\rightarrow$  maximum (10) in three perfect games with a Maximum reduction = 1). Only when this success rate was accomplished, more complex features would be unlocked. This algorithmic adaptivity could be overruled if the teacher wished to set specific games or books in the teacher tool.

### **3.5 Measurements**

#### **3.5.1 Quantitative Measurements: System-External Data**

System-external instruments measured learner's individual differences in reading skills and were used at pre-test and post-test. The test included a list of L2 words for measuring reading accuracy and a list of L2 non-words for the measurement of reading accuracy (developed by the iRead members at University College London), and a reading fluency test taken from the FAIR-FS test (Foorman et al., 2015).

An L2 word-reading accuracy measure (WA) was comprised of a list of 90 words, beginning with high-frequency monosyllabic words and progressing to lower frequency and phonologically complex words, to be read aloud in 1 min. An accuracy score was calculated by subtracting the total number of inaccurately read words from the total number of words read in 1 min (maximum 90.) Pre-tests were conducted at the participants' schools in September and October of 2019. Post-tests were recorded in April and May of 2020.

A non-word reading accuracy measure (NWA) comprised of a list of 66 non-words beginning with monosyllabic two-letter words increasing in complexity and length. A NWA score was calculated by subtracting the number of incorrectly pronounced items from the total number of items read in 1 min.

A reading fluency measure was collected after the non-word reading accuracy measure on the same recording. The entire passage contained 287 words of various frequency levels, learners were given 1 min to read it aloud. The total number of inaccurately pronounced or missed words were subtracted from the total number of words read in 1 min in order to calculate a reading fluency score in words per minute (WPM.)

L2 Proficiency measures included the listening and reading section of the Preliminary English Test (PET) designed by Cambridge University. The Picture Vocabulary Size Test (PVST) was used as a measure of receptive L2 vocabulary size. This test was developed by Nation and was initially used to measure the receptive vocabulary size of pre-literate L1 speakers (Nation & Anthony, 2016).

### **3.5.2 Quantitative Measurements: System-Internal Data**

System-internal data including the number of games and number of features per game among others were obtained utilizing the learning analytics embedded in the iRead infrastructure and were extracted via Tableau. All actions of the participants' gameplay were recorded by the iRead infrastructure. Data collected by the game that is pertinent to this study included the total number of games played, the total number of features played, and the outcome of games played. Using these data, a rate of games per feature, and a success rate were calculated. Also used in this study but not reported here were data about the number of books read and the number of tricky words saved.

### **3.5.3 Qualitative Measurements: Teachers' Interviews**

As part of a larger 'appropriation' study evaluating the iRead system, interviews were carried out at 4 different points. The first interview with participating teachers was conducted in the 2019–2020 academic year, and three more interviews with each teacher were carried out during the 2020–2021 academic year. Semi-structured interviews with 10 initial questions were used, and data were then transcribed verbatim and analyzed and double-coded by two researchers. An inductive thematic analysis (Braun & Clarke, 2006) was followed by which some initial categories were set for the analysis but emergent categories were also included as part of the analysis. Interrater agreement measured by simple percentage agreement was 95% and disagreements were discussed between the raters until a common agreement was reached. Reported here are the interviews conducted with 7 teachers and the focus is on their comments are used to tap into their perception of design, adaptivity, and learning (Table 3).

## **3.6 Statistical Analysis**

Data were processed with SPSS 25. Descriptive statistics were used, followed by correlational analysis as well as ANOVAs. Standardized options for missing data as well as outliers were applied. As for the difference between pre-test and post-test data, repeated-measures ANOVAs were used with a sequence as a factor in order to measure its impact on gains from pre-test to post-test.

**Table 3** Qualitative interviews conducted with teachers

No. of interviews	No. teachers	Range of word length	Range of time length
15	7	557–1137	12'23"–25'03"

Note: Teachers were interviewed three times, but in two of the schools two teachers were interviewed simultaneously

## 4 Results

In line with what Serra and Gilabert (2021) pointed out with a smaller sample, the gameplay experience was significantly different depending on the sequence, but this had no consequences for their learning gains.

Preliminary descriptive statistics (Table 4) and ANOVAs did not show any significant differences in proficiency between the two sequences. This made the two sequence groups comparable before the study started.

### 4.1 Research Question 1

As shown in Table 5, one-factor ANOVAs displayed no significant differences in terms of the number of games played by every sequence ( $df = 104$ ,  $F = 1908$ ,  $p = .170$ ), and neither for success, the number of books read, tricky words selected. The only significant differences were found for the number of features played ( $df = 104$ ,  $F = 143,167$ ,  $p = .000$ ) and the ratio of games to features ( $df = 104$ ,  $F = 103,242$ ,  $p = .000$ ). Teachers in the teacher-led sequences tended to assign a narrower range of features but they had students play more games on each feature. Students in the algorithmic sequences played fewer games per feature but they played a wider variety of features than their counterparts.

Word, non-word, and fluency tests were highly correlated, which suggests the tests worked well as a measurement of accuracy and fluency rate. If they read more words and non-words correctly, they also produced more correct words per minute in the passage. As shown by repeated-measures ANOVAs (Table 4), accuracy and fluency gains from pre-test to posttest were all significant for words, non-words, and word per minute. No interaction was found between gains in accuracy and fluency and sequence, except for non-words where the teacher-led sequence read significantly more correct non-words than the algorithmic sequence. It can therefore be concluded that as far as general measures are concerned learners in both sequences showed an improvement in their overall accuracy and fluency of their reading from pre-test to post-test. Correlations between all system measures and gains in words, non-words, and fluency suggested that only the number of books seemed to be related to learning, with a low correlation ( $r = .298$ ;  $p = .001$ ) and with no impact of any of the measures coming from the games.





**Table 5** Repeated measures ANOVAs of gains in words, non-words, and fluency

Origin		Type III sum of squares	gl	Mean square	F	Sig.	Partial Eta squared
Gains – words	Assumed sphericity	2326,407	1	2326,407	48,481	,000	1000
Gains – non-words	Assumed sphericity	361,535,353	1	361,535,35	2725,18	,000	,964
Gains – WPM	Assumed sphericity	5533,815	1	5533,815	46,880	,000	,313
Gains – words *sequence	Assumed sphericity	2597	1	2597	,054	,816	,001
Gains – non-words *sequence	Assumed sphericity	798,496	1	798,496	6019	,016	,055
Gains – WPM *sequence	Assumed sphericity	,631	1	,631	,005	,942	,000

## 4.2 Research Question 2

Although semi-structured interviews in a parallel study on ‘appropriation’ brought up comments by teachers that could be classified into many categories (connections to the curriculum, institutional support, use of the teacher tool, motivation, among others), for the sake of space this section will focus on the issues of game design, adaptivity, and learning as perceived by teachers.

Teacher’s perception of game design in relation to teachers’ goals ranged from a complete lack of connection between their didactic goals and the iRead games and e-reader:

FPT2SHY2: “In my case there is no connection between the didactic games and the stuff we do in the book”

to a partial overlap:

BST2ANY1: “Little by little I saw the kids were motivated, we were working on things that are similar to what we do in class and it has been an important process for them.”

This suggests that even if the design of the system was such that it would conform to the school curriculum, teachers’ perceptions and appropriation may have gone in a completely different direction, with some teachers seeing it as removed from their class goals. Nevertheless, most teachers (six out of seven in our data) saw at least a partial connection between their own goals and what the iRead system offered them.

As for the issue of adaptivity, in general teachers reported a positive attitude towards the idea of personalization and adaptivity. They either noticed adaptivity in the game itself by letting the game choose the contents:

FPT1NEY2: “The students that have more problems, the games are not so difficult that they left them behind. I notice that they try and try. If they don’t get it, the repeat it until they do it properly.”

or they ‘adapted’ the contents by means of the Teacher Tool to their class goals:

CMT1MSY2: “I try to adapt the games to the content and to what I know about each student. I have three groups. To the first group (the students with a more advanced level) I assign some content. The “normal” group is assigned another content. And then I know there are students with special needs and that have difficulties with it so I decrease the level (to the vowel sounds for example) because otherwise they do not understand it.”

This finding suggests that whether coming from the system (algorithmic adaptivity) or from teachers themselves (teacher-led adaptivity), all teachers perceived that the system offered them the opportunity to adapt to different individual learners or different groups of learners, and in all cases, such a system feature was valued positively.

Unexpectedly, adaptivity also brought about the possibility of integrating newcomers to the class more easily:

BTT1GDY2: “I think it is a tool of inclusion for newcomers. But the digital divide is not seen with the two new students in my class. They are more integrated than with the book, which they cannot follow at the same rhythm”.

While both learner tools, the games, and the e-reader, were designed so that they would integrate differences in reading abilities, proficiency, and individual paces, the report by two teachers of an unintended social dimension added a new angle to our initial concept of adaptivity. The fact that some newcomers struggled with the language but played the same types of games as their partners had an ‘egalitarian’ effect. Both struggling readers and newcomers that would typically lag behind the group when using a textbook could keep progressing at their own rhythm within the game exactly as their more ‘advanced’ partners.

Finally, teachers’ comments pointed out the language learning potential of the tools.

LMT2CGY1: ” There are students that learn better visually, or auditorily. This is so much better for them than a textbook. Also, the fact of repeating the games makes them integrate them little by little. For more advanced students it is like reinforcement, but for the ones lagging behind and having a hard time it is very important.”

Most teachers agreed on the fact that, in addition to motivating learners because of the gaming components, the iRead system would expose their learners to both the spelling and sounds of words. They thought that listening to the pronunciation of words and reading at the same time would have benefits for language learning. Teachers did not make any comments about the effectiveness of the auditory feedback that appeared every time a student made a mistake.

## 5 Discussion

### 5.1 *Research Question 1. Impact of the Sequence Gameplay Experience and Learning*

As shown by repeated-measures ANOVAs, learners in the iRead project became significantly more accurate in word and non-word reading and more fluent than they were at the start of the project. This significant improvement cannot be exclusively

attributed to iRead. Other regular English classes were being taught simultaneously, but one may speculate that iRead may have been instrumental to that improvement since in all participating schools reading in English throughout this period was mostly restricted to the children's gameplay and e-reader work within the iRead project. Interestingly, reading more books in the e-reader was mildly related to improvements in reading fluency despite no effects of the number of games played. It should be borne in mind that games dealt with features and words mostly in isolation, whereas in the e-reader features and words appeared integrated into whole, meaningful texts. Martin-Chang and colleagues (Martin-Chang & Levy, 2006; Martin-Chang et al., 2007) have suggested that when a word is processed in context the amount of semantic processing is elevated as opposed to reading a word in isolation. We concur with other researchers (Faulkner & Levy, 1994, 1999) who have suggested that words are better learned when contextually bound with the meaning of the passage. In context, words are not thought of as individual units, but in terms of how they relate with the overall message of the text, and when words are encountered in different passages, their semantic representations become more nuanced (Bolger et al., 2008). This may explain why a relationship was found between books and reading development and not between games and reading development.

Rather than measuring the effectiveness of the system as a whole, however, this study has focused on whether progress depended on the sequence of the linguistic units presented to learners, either by the algorithm or by the teachers themselves. Clearly, few of the measures showed any differences in gameplay between the two sequences. The main difference was the range of features that they played (a wide variety in the algorithmic sequence as opposed to a narrower one in the teacher-led sequence) and the number of games per feature (which was higher when the teachers assigned the features and associated games than when the algorithm did the job). This would suggest that adaptivity indeed played a role since the system offered whichever feature was open as per the description and pre-requisites of each feature in the domain model. While the experience was different for each group, these differences do not seem to have had a major impact on learning since all learners learned regardless of the sequence. A first, most outstanding explanation may be that the use of the system (4–5 months instead of the 7–8 months cut short by the pandemic) may have made it difficult for the sequence to have an obvious effect. It is an issue whether a full application of iRead may have shown a larger difference between the two sequences. This argument coincides with the idea by Van de Ven et al. (2017) that simply the intervention may not have been long enough for any effects to be captured. A weekly hour of gameplay for 4 months may simply not have been sufficient for the treatment to have more obvious effects. A second argument in line with Vanbecelaere et al. (2019) is that all learners progressed regardless of the sequence under which they played the games or read the texts. We agree with Serra and Gilabert (2021) who suggest that the algorithm may have not been sophisticated enough. As designed, the algorithm employed by the iRead system used basic performance information by each player to be fed into the adaptivity algorithm. It computed the pre-requisites for each feature in order to present features in increasing difficulty during gameplay (and the level of mastery for each feature was

set at 70%. After each feature was tackled successfully three times the system opened the next more difficult feature. But the algorithm did not quite compute learning objectives, teaching strategies, and end-user requirements, and it did not accommodate temporal queries (e.g. like the number of days since a specific feature was played). It did not specify text selection on the basis of the features that were opened, which would have also contributed to the overall coherence of the design.

## **5.2 Research Question 2. Teachers' Perception of Design, Adaptivity, and Learning**

Our second question enquired into EFL teachers' perception of the tools' design, their adaptive components, and their learning potential. The Teacher Tool integrated into the *iRead* system provided the opportunity for teachers to get closer to their regular syllabus if they wished to. Reports showed that even if they could see the potential of creating an overlap between their regular EFL syllabus and the game, the overwhelming choice was to let the system make the choices by itself. Teachers ranged from establishing no connection between their regular classes and *iRead* to showing a partial overlap, with the latter being the most commonly mentioned option. This is in line with Bunting et al. (2021) who reported teachers wanting the *iRead* system to be complementary to other curricular activities they had already planned.

As per our results regarding adaptivity, teachers ranged from simply noticing it, to actually gearing it to their own goals, or even seeing potential social, integrative dimensions. Teachers reported seeing the algorithm operating in their classes as children played. To our knowledge, although a number of studies have started to measure the effects of adaptivity on reading (Vanbecelaere et al., 2019), no previous studies have reported on the perception of adaptivity by teachers. Adapting to students was not exclusive to the algorithm, since teachers naturally make efforts to adapt to the different types of learners in their classes. As seen in the results section, teacher-led adaptivity took place as teachers adapted content to each of their groups. The use of the Teacher Tool, which allowed the teacher to adapt to their students, was mentioned when they tried to either choose specific content for the whole group or content for specific students.

The social, integrative dimension of the *iRead* was indeed an unexpected finding with enormous potential of personalized designs. A few exceptions in the overall little use of the Teacher Tool included adapting to newcomers to the class or to learners with either difficulties or that were more advanced than others. This was also a kind of 'teacher-led adaptivity' which contributed to personalization, and it underscores the great potential of adaptive technologies to integrate differences in reading skills and proficiency as well as for contributing to social integration.

Teachers, in general, perceived the learning potential of the *iRead* system and they partially linked it to adaptivity. The fact that learners could repeat the same

features (albeit through different games types) over and over until they mastered them was perceived as helpful for learning. The multimedia nature of the system, with words and texts being read aloud by the automatized voice system, was also pointed out as potentially beneficial for learning by teachers. Motivation was emphasized as one of the key factors by all teachers. Games caused learners to focus during their English classes and resolve language issues driven by the mechanics and aesthetics as well as other game elements. Although we cannot compare our study and the technologies of iRead to similar video games, our findings are in line with findings by Rocha et al. (2018) who found that educational games are perceived by teachers as fostering motivation and engagement among students.

## 6 Limitations

There were several limitations to the present study out of which we would like to highlight three. Firstly, while it was shown that learners improved from pre-test to post-test in both the algorithmic sequence and teacher-led sequence, no control group was used to compare gameplay against the lack of it. Secondly, it would have been more appropriate to have more classroom observations in order to triangulate the information we received from the system and the teachers. Classroom observation, however, was only possible at the very beginning of the project but discontinued later on. Triangulating more sources of information would have enriched our interpretation. Thirdly, at the time of writing this study, we have not finished analyzing learners' impressions about the use of iRead, which would take our interpretations and our understanding ever further. Data about learners' engagement was collected and is in the process of being analyzed.

## 7 Conclusions

Serious games have the potential to impact second language development of reading skills. Our data showed that there was progress in reading accuracy and fluency. In the case of the iRead system, however, not all apps contributed equally. The less 'flashy' e-reader was the only app where higher use and exposure mildly correlated with the learning of reading skills. For Navigo games, no such correlation was found, so playing more games did not lead to the improvement of reading skills. Adaptivity, whether driven by the system algorithm or by teachers themselves, also had an impact on the way learners experienced the apps. This was not exclusively shown by our system-internal data but also by the perceptions of adaptivity by teachers, who did see an impact on their learners and, in some cases, they also actively used the possibilities of the system to adapt to their learners and their different groups. The unexpected dimension of social integration in addition to the learning potential of the iRead system as perceived by teachers underscores the

importance of having both algorithms and teachers involved in the process of implementing serious games in educational contexts for the enhancement of second language development.

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# Assessing L2 English Skills in an Online Environment: What Can This Look Like and How to Assess L2 English Writing Skills?



Vanessa De Wilde, Geert De Meyer, and Pedro De Bruyckere

**Abstract** Studies with young L2 English learners have shown differences in learners' L2 English proficiency. This creates a situation in which learners in a classroom often form a very heterogeneous group. In this study, we report on the development of an online tool to assess pupils' proficiency level at the start of formal instruction in Flanders. We used group concept mapping and a teacher questionnaire to investigate what this tool should look like. Results indicated that teachers opted for an online test that contained tasks for all four language skills. In the second part of the chapter, we report on one of the challenges that came with the development of this online tool, i.e. finding a method to assess learners' writing that is both reliable and easy to use. In order to do this, we explored the possibility of using benchmark texts which were selected in a two-stage approach using comparative judgment. Results showed that this method with five benchmark texts that teachers can use to correct their learners' writing can indeed be used reliably and efficiently.

**Keywords** Benchmark texts · Writing · Assessment · Online assessment · Adolescent learners · Evaluation

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## 1 Introduction

This chapter reports on the development of an online tool designed to measure L2 English learners' proficiency at the CEFR A2-level and as such inform teachers about the differences in these learners' proficiency levels. The chapter will first discuss the development of the online tool which started from the needs expressed by Flemish L2 English teachers. Secondly, the chapter will focus on a valid and reliable way to assess learners' writing skills. In order to be able to assess the learners' writing in a reliable yet time-efficient manner, we explored the possibilities of a two-stage approach for marking L2 English writing using comparative judgment and benchmark texts.

Below we will discuss the need for an online tool measuring L2 English proficiency, some of the difficulties concerning the assessment of writing skills and the context in which this study took place. We will then describe the different steps that were taken in the development of the online tool, discuss the results of the study and end with some pedagogical implications.

## 2 Literature Review

### 2.1 *The Need for an Online Assessment Tool*

Studies with primary school age L2 English learners have found considerable differences in L2 English proficiency even before the start of formal L2 English instruction (De Wilde et al., 2020; Muñoz et al., 2018; Puimège & Peters, 2019). These large differences in learners' prior L2 English knowledge pose considerable challenges to teachers so knowing about these differences is important as prior knowledge can have a huge impact on further learning, e.g. in relation to the amount of instruction that is needed (e.g. De Bruyckere, 2017; Hattie & Yates, 2013). Therefore, it was decided to develop a test to give teachers an opportunity to get information about their learners' L2 English proficiency level at the start of the lessons in secondary school. The test is meant to inform teachers so they can adapt lessons to the learners' various levels of proficiency and prior knowledge of English (e.g. through differentiated instruction). It is thus meant to be a low-stakes test.

### 2.2 *Assessing Writing*

Assessing students' writing comprises many different aspects such as content, organization, and linguistic features. Therefore, scoring writing tasks is often considered a challenging and time-consuming exercise (Hamp-Lyons, 1990; Schoonen, 2005). Teachers and researchers have studied many different methods to rate writing skills.

A distinction is often made between analytic and holistic methods. In order to rate writing tasks analytically, raters often use rubrics that list criteria that should be taken into account often also containing descriptors of the expected performance for the different levels of each criterion. In an analytic scoring method, the final score is a combination of partial scores (Crusan, 2013). Holistic scoring methods look at the text as a whole and attribute one single score to the writing product, whereas analytic scoring methods give different scores for different aspects of the text, such as linguistic or content-related aspects (Harsch & Martin, 2013). When scoring a writing task in a holistic manner, raters sometimes use a set of criteria that need to be considered when rating the task, but these criteria serve as a guideline to give one overall score. There are also other methods to assess writing tasks holistically. Two of these methods will be discussed below.

### 2.2.1 Two Holistic, Comparative Approaches: Comparative Judgment and Benchmark Texts

Apart from the more traditional analytic and holistic approaches in which students' writing is assessed in an absolute manner, there are also comparative approaches, in which representations (e.g. written texts or images) are compared.

A method that has recently received some attention is comparative judgment, inspired by the work of Thurstone (1927), who claimed that people's judgment is more reliable when comparing performances than when judging a single performance. The method was introduced into education by Pollitt and Murray (1996). In this method, multiple raters compare pairs of representations (e.g. written texts) and decide which of the two representations is the better one. After the raters have made a set number of comparisons of all the tasks, each learner's writing task is assigned a place on a rank order ranging from the weakest to the strongest. The overall quality of a writing task is thus based on repeated comparisons (Lesterhuis et al., 2017). Recently, research teams have set up studies to organize this type of rating process digitally. To build an information system that could be used for comparative judgment, Coenen et al. (2018) identified several design requirements for the tool to be a success. These were: being able to do valid and time-efficient assessments, reduce cognitive load, increase reliability, support competence development, and support accountability. The tool which resulted from this study is called Comproved ([www.comproved.com](http://www.comproved.com)) but similar tools are available (e.g. No More Marking, Jones, 2016). The studies mentioned above have shown that this approach can result in reliable ratings, but various raters are needed, and many comparisons have to be made. The guidelines on the Comproved website for example, mention that for a reliability of .70 the following formula should be used:  $number\ of\ representations * 7.5 / number\ of\ raters = number\ of\ comparisons\ per\ rater$ . This shows that the procedure can be quite time-consuming which might be a hindrance for teachers in day-to-day classroom practice, as the number of holistic comparisons to be done can be high (Humphry & Heldsinger, 2020; Lesterhuis et al., 2017).

Another form of holistic rating can be done with the use of benchmark texts (Lesterhuis et al., 2017). In this procedure, several texts are chosen which represent different levels of overall writing quality to serve as benchmarks. Teachers, or other raters, then compare their students' work with chosen benchmarks and decide which of the texts resembles their students' work the most. The level associated with the most suitable benchmark text is the level allocated to their students' writing. Bouwer et al. (2016) investigated possibilities of rating written texts with benchmark texts and found that benchmark ratings were as reliable as 'absolute' analytic and holistic ratings. They did this on paper however, while the aim of this study is to check if this can also be a suitable approach online.

Recently, several studies which investigated L1 writing have adopted an integrated, two-stage approach that combines the use of comparative judgment and benchmark texts (De Smedt et al., 2020; Humphry & Heldsinger, 2020; McGrane et al., 2018). In this approach, first, a set of written texts are compared through comparative judgment. After this procedure, experts choose a number of texts from this set that represent different levels of writing quality as benchmark texts. These benchmarks are then used when scoring new, similar writing tasks. Below, we report on a study in which we have adopted this two-stage approach for an L2 picture narration task to investigate whether using this approach which has been used in L1 writing, is also appropriate in L2 writing in an online environment.

This chapter reports on the development of a tool meant to assess L2 English learners' proficiency level. It describes the process towards a test structure and content that meets teachers' needs. It further investigates a method to address specific challenges concerning the assessment of written texts. The following research questions are central in this chapter:

RQ1: What should an online tool which aims to map learners' L2 English proficiency at the start of formal instruction look like?

RQ2: How efficient and reliable is the assessment of L2 English writing tasks following a two-stage approach (combining the use of comparative judgement and benchmark texts)?

### 3 Context of the Study

Formal L2 English lessons are compulsory in Flanders, the Northern part of Belgium, from the first or second year of secondary school onwards, when learners are 12–14 years old. The starting age for English is rather late when compared to other European countries (Enever, 2011) because English is the second foreign language to be taught in Flemish schools. The first foreign language which is taught in Flanders is French, which is an official language in Belgium.

Pupils are expected to reach the A2 level of the Common European Framework of Reference (Council of Europe, 2009) for English by the end of the second year of secondary school. In primary education, L2 English is not a compulsory part of

the curriculum, and formal instruction only starts in secondary school. However, this does not mean English is absent in most learners' daily lives. Most learners have been exposed to English regularly before the start of the lessons (for example, when gaming or watching television), and this leads to big differences in pupils' prior knowledge of English. De Wilde et al. (2020) did a study with 780 Flemish learners who were in the last year of primary school. They found that 25% of Flemish 11-year-olds obtained a score of 80% or higher on an A2-level listening test with a mean of 15/25 but overall, there was a broad range of test scores (from 0 to 25 out of 25). For the A2-level speaking task, scores were considerably lower (with a mean of 7/20), but still, a considerable number of the participants scored 80% or higher (14% of the participants). Finally, 10% of Flemish 11-year-olds obtained a score of 80% or higher on an A2-level reading and writing test, whereas more than half of the participants obtained a test score below 50%, again pointing to large individual differences prior to the start of formal instruction.

The online tool presented in this chapter was developed to give teachers in Flanders more insight in the actual differences in their learners' L2 English proficiency level. First, we investigated what teachers expected from such a tool and in a second study we looked into an efficient and reliable way to score learners' writing.

## 4 Research Question 1

Following, we proceed to explain the methodology and results obtained to answer our first research question, which is: "What should an online tool which aims to map learners' prior knowledge look like?"

### 4.1 Methodology

#### 4.1.1 Instruments and Procedure

To be able to develop a test that would meet teachers' needs, we decided to consult teachers and other stakeholders before the actual test development was started. The teacher questionnaire was designed using group concept mapping (GCM). This method, which was developed by Trochim (1989a, b) and further adapted by Stoyanov and Kirchner (2004), can be used to gather and organize ideas in a structured manner. In this study, it was used in a simplified version which consisted of three rounds. In round one, we sent a list with open questions to experts in the field of education and assessment to gather answers which could lead to items for the questionnaire. The open questions were listed in an online form, the link to the form was then e-mailed to the experts who answered the questions anonymously. They were given 1 week to answer the questions. In round two, we sent the same seven experts a set of possible items for the questionnaire, which were based on the

answers to the open questions from the first round. We asked the experts to rate how important these items were. Again, they had 1 week to complete the questionnaire. In the last round, we made an initial version of the questionnaire for the teachers and asked a focus group with five new participants with expertise in language testing and/or foreign language teaching to comment on the questionnaire and give suggestions for improvement. After the focus group, we made a second and final version of the questionnaire, which we made available for teachers. The questionnaire consisted of some questions asking about their teaching and experience and a number of statements about what they thought an L2 English test for their learners should look like. Answers to the statements were given on a Likert scale ranging from 1 (totally unimportant) to 5 (very important). The questionnaire can be found in [Appendix A](#).

#### **4.1.2 Participants**

As mentioned above, we consulted teachers and other stakeholders in order to be able to have a clear view on their expectations for an L2 English proficiency test. In the first phase, we consulted experts in the field of foreign language education and assessment such as scholars, policymakers, and curriculum designers ( $n = 12$ ). Seven experts took part in the group concept mapping procedure and five experts took part in the focus group. The participants in the focus group were part of the advisory committee for this research project.

In a second phase, 95 participants filled in the teacher questionnaire. Most participants were teachers in the first 2 years of secondary school ( $n = 64$ ), 29 teachers also taught in secondary school but taught older pupils, one participant was a teacher trainer and one educational adviser for English took part in the study. The teachers who completed the questionnaire had various degrees of experience (between 1 and over 30 years of experience).

#### **4.1.3 Analysis**

The results of the teacher questionnaire were analyzed quantitatively and used to make decisions about the structure, content, and duration of the test. Descriptive statistics can be found in the results section.

### **4.2 Results**

Teachers' answers showed that they believed a test should contain activities looking into learners' prior knowledge of the language skills (cf. Table 1). Therefore, it was decided that the test should consist of four parts, each testing one language skill: listening comprehension, reading comprehension, writing, and speaking.



**Table 1** Teacher questionnaire: descriptive statistics test characteristics (Likert scale 1–5)

This test should...	Min	Max	Mean	SD
Focus on realistic and real language.	1	5	4.53	0.79
Focus on academic language.	2	5	3.65	0.78
Focus on productive language.	1	5	4.39	0.89
Focus on receptive language.	1	5	4.22	0.71
Be linked to the CEFR.	2	5	3.96	0.83
Measure the four skills.	1	5	4.53	0.85
Measure listening skills.	1	5	4.42	0.72
Measure reading skills.	1	5	4.43	0.66
Measure speaking skills.	2	5	4.45	0.68
Measure writing skills.	2	5	4.21	0.77
Measure grammatical knowledge.	1	5	4.01	0.89
Measure lexical knowledge.	1	5	4.23	0.81
Give feedback to the pupils.	1	5	4.45	0.80
Give teachers the opportunity to give feedback to the pupils.	1	5	4.58	0.74
Be done on paper.	1	5	2.79	1.01
Be done in a digital manner.	1	5	3.26	1.04

Another important aspect for teachers was the possibility to give feedback. The form of the test was less important for the teachers than the content, but they seemed to favor a digital test over a paper-based test. Descriptives statistics of the scores given by the teachers can be found in Table 1.

The majority of the teachers (60%) also asked that the duration of the test would be approximately 50 min, the equivalent of one teaching period in Flanders, 31% of the teachers opted for a shorter test (30 min) and 9% of the teachers would also use a test which would take more than 50 min. We decided to settle for a 50-min test. As the test is meant for learners who are at the start of formal education and learners could be absolute beginners, the instructions had to be available in both English and Dutch, which is the language of instruction.

During test development, we considered the test's practicality, and we decided a type of scoring was needed that would be easy to use for the teachers, as they would be the ones scoring their learners' tests. For the scoring of the writing task, we decided to investigate the possibility of using benchmark texts which were selected via a two-stage approach. This procedure will be discussed below.

## 5 Research Question 2

After having analyzed the testing tool, we proceed to answer our second research question, which is: "How efficient and reliable is the assessment of L2 English writing tasks using benchmark texts which are selected via a two-stage approach?". We will do so through two different studies.

## 5.1 *Study 1*

### 5.1.1 Methodology

#### Participants

In order to be able to answer the second research question, 121 participants wrote one or two written texts. All the participants were at the start of formal L2 English education and were between 12 and 14 years old. We tested pupils in six classes in two different schools, three classes per school. The participants from school one were in the first year of secondary school, those from school two were in the second year of secondary school. All participants had just started formal L2 English education. They had received less than 15 h of formal English instruction.

Fifty-three raters took part in the comparative judgment procedure. All the raters had experience with rating L2 writing tasks: They were either working as teachers or teacher trainers ( $n = 11$ ) or they were in the second year of a three-year bachelor's program in which they were trained as English teachers ( $n = 42$ ). The students from the teacher training program had already done a teaching practice in a secondary school and had been trained to score students' work.

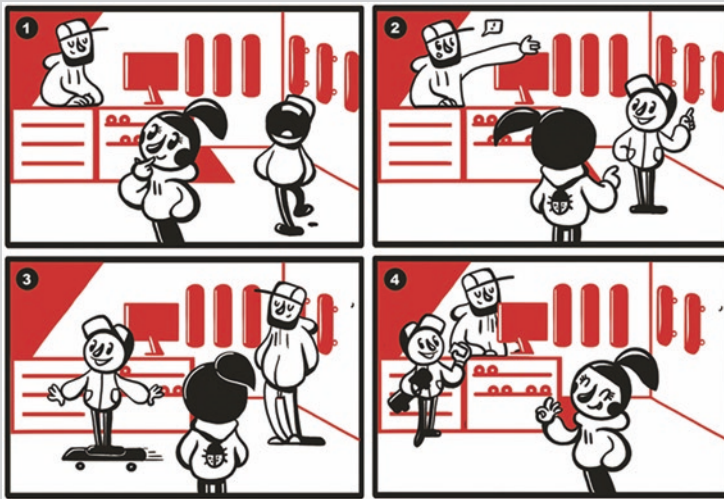
#### Instruments and Procedure

To be able to capture the different levels of proficiency among the learners while still giving sufficient support to the true beginners, we decided to use a picture narration task. According to Goodier and Szabo, the authors of the Collated Representative Samples of Descriptors of Language Competencies Developed for Young Learners (2018), the task of telling a simple story is a relevant task at the CEFR A2-level for learners aged 11–15 years. The visuals that were added in the writing task in the present study were meant to give extra support to learners with a low(er) proficiency level. Three different picture stories were designed. An example of one of the picture stories can be found in Fig. 1 below.

In the first phase of the study, we collected 177 writing samples. The participants described a set of four pictures which together made up a story. There were three different stories (picture story A,  $n = 60$ ; picture story B,  $n = 56$ ; picture story C,  $n = 61$ ). The picture stories were designed in such a manner that all pupils would be able to relate to the situations depicted in the stories. No explicit time limit was given to the pupils. The writing tasks were paper-based and were digitalized by the researchers for the next phase of the study (comparative judgment).

The learners' writing tasks were rated using the comparative judgment tool Comproved (Coenen et al., 2018). In this tool, raters are asked to compare two representations, in this case two of the 177 texts, and to decide which of the

(continued)



**Fig. 1** Example of a picture story designed for the picture narration task

two representations is the better one. There were 53 raters who each made 33 comparisons, resulting in a total of 1749 comparisons. The number of comparisons is sufficient in order to obtain reliable results (cf. formula: number of representations \* 7.5 / number of raters = number of comparisons per rater). Per comparison, raters were asked to select the best representation of two. There were no further instructions concerning how they should rate the writing sample, no criteria were given for the assessment. They were only asked to indicate which writing sample they believed had the highest quality of the two samples they were presented with in each comparison. Raters could choose to add some comments to justify their decision, but this was not obligatory, and it was not taken into account when making the rank order. Following the procedure of the two-stage approach (Humphry & Heldsinger, 2020), the results of the comparative judgments procedure were used to inform the choice of the benchmark texts. Descriptors of the benchmark texts were taken from the CEFR descriptors for young learners aged 11–15 years (Goodier & Szabo, 2018).

### Analysis

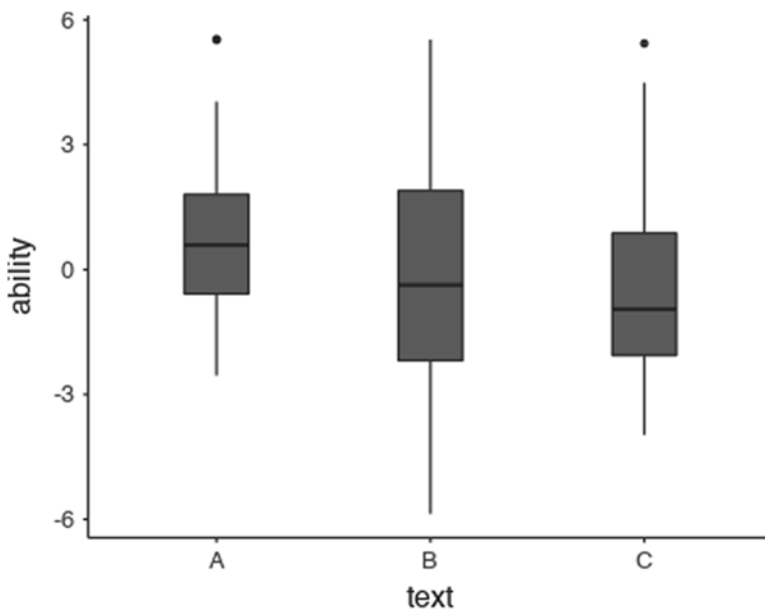
Descriptive statistics of the rank order of the 177 representations (written texts) that resulted from the comparative judgment procedure are given in the results section. To investigate the reliability of the rank order, the scale separation reliability (SSR) was calculated. Verhavert et al. (2018) found this measure (with values between 0 and 1) can be used as an index for interrater reliability in comparative judgment.

### 5.1.2 Results

The raters' work resulted in a reliable rank order of the 177 representations. In the current study, the SSR was high (.88), indicating that there was strong agreement between the raters on the quality of the written texts. Thus, we could be confident that the rank order that followed the 1749 comparisons was reliable.

We then compared the results of the comparative judgment procedure for the three different picture stories and chose the picture story with the best spread in results. The boxplot in Fig. 2 shows the spread of the scores of each representation (written text) per picture story. In Table 2, the descriptive statistics for the results of the comparative judgment procedure for the representations per picture story are given. Figure 2 and Table 2 show that the spread in the representations for story B (which is the example story given in Fig. 1) is almost evenly divided. The mean ability is around zero, some representations received a high score (maximum score = 5.52), others have a very low score (minimum score:  $-5.87$ ), there are no outliers. We, therefore, decided to continue the study with story B in stage two.

After the comparative judgment procedure, two researchers selected four benchmark texts. The selection was based on the rank order of the representations which was decided by the 53 raters who took part in the comparative judgment procedure. Starting from that order, the researchers chose texts which were a good representation of the four different levels they wanted to discriminate: above A2, A2, A1 and below A1 based on the level descriptors found in the Common European Framework



**Fig. 2** Boxplot showing the scores for the three stories rated through comparative judgment. (ability = score assigned to each representation after the comparative judgment procedure)

**Table 2** Descriptive statistics showing the spread in the rank order of the representations per picture story

	Min	Max	Mean	SD
Story A	-2.54	5.53	0.81	1.88
Story B	-5.87	5.52	-0.18	2.76
Story C	-3.97	5.43	-0.54	2.16

of Reference for Languages (Council of Europe, 2009). If the learners were unable to answer in English or did not write anything at all, their writing was scored as ‘no output’ which was considered a fifth level. The top and bottom level benchmark texts corresponded to representations that were ranked very high (5.52) or very low in the comparative judgment procedure (score of  $-3.8$  and lower). For the bottom level there is no benchmark text as this level corresponds with texts written in Dutch or tasks where participants did not write anything at all. The benchmark text which corresponds with the A2-level received a score of 0.34 in the comparative judgment procedure, the A1-level benchmark text corresponds with a score of  $-0.23$ , and the benchmark text that was chosen for the below-A1-level corresponds with a score of  $-1.16$ . The scores of the benchmark texts show that the rank order of the comparative judgment procedure was respected in text selection. Following the procedure Humphry and Heldsinger (2020) used for the assessment of L1 writing, performance descriptors were added to the benchmark texts. These descriptors are meant to give the characteristics of a text at a certain level and can help teachers when they are in doubt about which benchmark text is closest to their students’ writing. The benchmark texts and descriptors together should give teachers the tools they need to assess similar writing tasks. The performance descriptors can also be used to give feedback to the students. The performance descriptors in this study were based on the CEFR descriptors for young learners aged 11–15 years (Goodier & Szabo, 2018). The benchmark texts and the descriptors for all levels can be found in [Appendix B](#).

## 5.2 Study 2

### 5.2.1 Methodology

#### Participants

In this second study, 407 pupils from three schools participated. The study was conducted in schools that did not participate in study 1 (cf. 15.5.1). All participants were in the first year of secondary school. They were at the very start of formal L2 English education and had received 0 to 5 h of formal English classroom instruction. Each participant did the complete online skills test.

### **Instruments and Procedure**

In this study, the reliability and efficiency of rating learners' writing with the benchmark texts were investigated using 407 learners' written texts. The writing task, a picture narration task based on picture story B, was given to the participants as the third task of our proficiency test measuring the four skills. Listening and reading skills were tested before the writing task, speaking was tested last. The students did the test on a desktop or a laptop, depending on what was available in their own school. They saw the visual as shown in Fig. 1. As the learners are at the start of L2 English lessons, instructions were given in English and Dutch. They were asked to type the story in a text box below the picture. Two raters scored the writing tasks using the benchmark texts with performance descriptors. To further investigate the efficiency of assessing written tasks with benchmark texts, we did an exercise with 98 teachers during a training session in which the tool was presented.

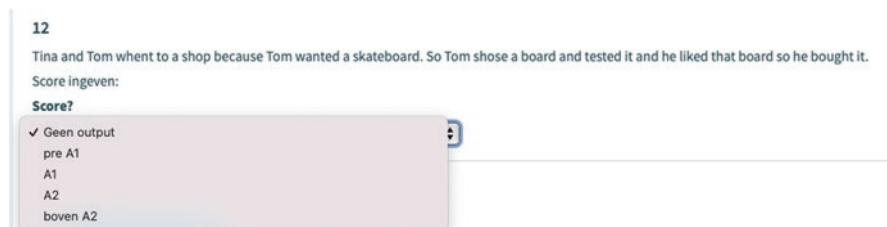
### **Analysis**

We used descriptive statistics to report the spread in results and used weighted kappa to calculate interrater reliability. To report about the efficiency of scoring with the benchmark texts, we report the time raters needed to do the scoring activity.

## **5.2.2 Results**

As mentioned above, two raters scored 407 written texts with the benchmark texts. The results showed that about 10% of the participants produced no output, 30% of the writing tasks received a pre-A1 score, 36% scored A1, 17% received an A2 score and 6% had a score higher than A2. Overall, 40% of the learners were not able to get the message across but 60% of the participants were already able to write a simple story at an A1 or A2 level. To investigate the reliability of the scores, 106 writing tasks were scored by both raters. The interrater reliability was high (weighted kappa = .90), indicating a very strong agreement between the raters' judgments. The two raters reported they scored about one task per minute, which showed this form of assessment to be very efficient.

To further check the reliability of using the benchmark texts with descriptors, 98 teachers, who took part in a session on how to use the online tool, did an activity where they rated 15 written texts with the benchmark texts. They were asked to first do this individually and then compare the results with a partner. The teachers were able to do the rating in 15 min. When comparing their ratings to those of another teacher, most ratings turned out to be the same and if they were different, they were



**Fig. 3** Screenshot from the teacher view in the tool showing the pupil's writing and a drop-down menu in which the teacher can add the score after comparison with the benchmark texts. (Dutch: Score ingeven = English: enter score, Dutch: Geen output = English: no output)

Leerling	Schrijven
	Ingeven
1	pre A1
12	A2

**Fig. 4** Screenshot from the teacher view in the tool showing the pupils' writing scores. (Dutch: Leerling = English: pupil, Dutch: Schrijven = English: writing, Dutch: Ingeven = English: enter – this is where the teacher can click to see the pupils' writing and enter the score cf. Figure 3)

never more than one level higher or lower, which is in line with the reliability found above.

In the online tool which was made available for the teachers, the same procedure can be followed. The teacher can access the students' results via a results tab and can then access and score the writing with the help of the benchmark texts from the teacher's manual (cf. Figure 3). When all texts have been scored by the teachers, the teacher can consult the scores in an overview (cf. Figure 4). The score on the written tasks is not directly communicated to the pupils via the tool but via the teacher as was advised by the experts in the focus group on test development. A lower score means that pupils have less prior knowledge which is not necessarily a bad thing. However, it could be perceived as a failure by the learner. If teachers communicate the score to the pupils, they can better explain what the score means.

## 6 Discussion

In the study reported in this chapter, we investigated what a test meant to map pre-adolescent learners' L2 English proficiency can look like. From the results in the questionnaire it was clear that teachers wanted the test to look into young L2 English learners' proficiency in the four language skills (reading comprehension, listening



comprehension, speaking and writing). This could be because the official curricula in Flanders stress the importance of language skills and focus on pupils' abilities to communicate. When asked about the test format, the teachers had a preference for an online tool. Furthermore, we opted for an online tool also because a website is easily accessible for all teachers.

The second part of this chapter focuses on using benchmark texts gathered via a two-stage approach as a method to rate L2 writing tasks designed for young learners in an online environment. The results show that benchmark texts which are selected via a two-stage approach, which was shown to be a reliable approach for L1 writing (De Smedt et al., 2020; Humphry & Heldsinger, 2020; McGrane et al., 2018), also leads to a reliable assessment of L2 picture narration tasks in a test designed for novice L2 English learners. One of the main advantages of this approach is that it is straightforward and easy to use for teachers. This is in line with observations in previous research (Lesterhuis et al., 2017; Humphry & Heldsinger, 2020).

We also aimed to investigate whether and how benchmark texts gathered via a two-stage approach can be integrated into an online tool that aims to assess L2 English writing skills. It was shown that the benchmark texts resulting from this approach can be integrated into an online tool that aims to map pupils' prior knowledge at the start of formal instruction. In the future, a similar approach could be followed for writing at a different level or with a different type of task and the use of benchmark texts could be integrated into other online tools in a similar manner.

The process leading to the choice of representative benchmark texts is quite time-consuming because a large group of raters and a lot of representations are necessary for the comparative judgment procedure to render highly reliable results. However, once this step has been taken, benchmark texts have been selected, and the descriptions of the different levels have been added, this method is very straightforward. The teachers are thus offered an efficient and reliable tool for rating their pupils' work. Benchmark texts are easy to use because teachers only need to compare their students' writing to the four available texts (with performance descriptors) or a fifth 'no output' option. They then decide which of the benchmark texts is of a similar quality to the students' writing. Once the teacher is familiar with these texts, the assessment can be done quickly and reliably. This approach makes it possible to integrate productive tasks (here: writing) in an online assessment tool that can be reliably assessed by the classroom teacher. This means that once the, albeit time-consuming, procedure of the two-stage approach has been completed, there is no need for extra raters or a centralized rating system to assess the writing tasks in this online tool.

Furthermore, the descriptors which are added to the benchmark texts can be used by the teachers either to give collective and individual feedback on their pupils' writing or in the design of their lessons. If, for example, the learners' writing tasks in a class group show large differences in prior knowledge, the teachers could decide to integrate these results in their lessons. They could offer materials to improve learners' writing (e.g. vocabulary necessary for the writing task or information on

linking ideas in writing) which can appeal to all the learners in the group (e.g. through differentiated instruction).

Teachers or other stakeholders could also use this two-stage approach to select benchmark texts for other types of classroom assessment. They could either use one of the online tools which are currently available for comparative judgment and then follow the procedure described in this article for the selection of benchmark texts and performance descriptors.

If this approach is too time-consuming or expensive, they could also decide to look into a 'light version' of this two-stage approach. Teachers and teams of teachers could rank learners' writing tasks which they have rated in previous years in the first step and in the second step they could choose a number of tasks which they believe are representative as a benchmark for a certain level and describe why these tasks are considered representative (based on the objectives formulated by, for example, the curriculum or the CEFR). This method would give teachers in the same team the opportunity to all use the same benchmark texts with descriptors to assess their learners' writing similarly. Choosing a selection of representative benchmarks might add to the reliability of assessment in a team of teachers but the reliability of this 'light version' would have to be investigated in future studies. Furthermore, deciding on the performance descriptors might be an interesting exercise to do with a team as it might lead to a more deliberated assessment of students' writing.

In a follow-up study researchers could develop materials for teachers to tackle these differences in their L2 English classes but this was not within the scope of our project, which focused on the development of an online tool to assess learners' prior knowledge. Future studies could also investigate the differences between scores given using rubrics and scores given via the two-stage approach.

A limitation of this study is that the group concept mapping was done via an online questionnaire but the results from the online group concept mapping procedure were confirmed in the live focus group.

## 7 Conclusion

In this chapter we have shown how we decided on the content and form of an online tool to assess L2 English learners prior knowledge based on needs that were formulated by teachers. This resulted in a tool with tasks for all four language skills which can be completed in one 50-min lesson period.

One of the biggest challenges in the development of the tool was finding a reliable and efficient way to assess learners' written tasks. We decided to explore the possibility of using benchmark texts gathered in a two-stage approach. Overall, the two-stage approach combining comparative judgment and benchmark texts showed to be a good method to ensure reliable results when rating beginners' L2 narrative

writing. This was shown by the interrater reliability in the second part of the study. Furthermore, the use of benchmark texts for assessment is straightforward and leaves little room for interpretation by individual teachers as there is one single holistic judgment based on comparison with a given set of texts (and descriptors). This proves to be a good method for assessing writing skills in an online tool, as, once the two-stage approach has been completed and the tool is online, the entire rating process can be done by the L2 English teacher. There is no need for external raters to score the writing tasks and the assessment still leads to reliable scores.

This study reported on an exploration into a holistic way to assess learners' writing and could be useful for teachers and other stakeholders who are looking for a practical, time-efficient, and reliable manner to rate their learners' writing. Further research with learners from different proficiency levels and different ages is warranted for the approach to be more widely used.

**Notes** The tool can be found here: <https://www.starttoetsengels.be>

## Appendix

### *Appendix A: Teacher questionnaire*

1. Highlight the correct answer:

You are a	man
	woman
	x.

2. Highlight the correct answer:

You are a	L2 English teacher in lower secondary education.
	L2 English teacher in higher secondary education.
	L2 English teacher in primary education.
	Teacher in primary education.
	Teacher in secondary education.
	Other: _____

3. Highlight the correct answer. How much teaching experience do you have?
- 0–1 year
  - 1–3 years
  - 3–5 years
  - 5–10 years
  - 10–20 years
  - 20–30 years
  - More than 30 years
4. How important do you consider the following statements? Give a score between 1 (completely unimportant) and 5 (very important) or answer not applicable.
- This test should focus on realistic and real language.
  - This test should focus on academic language.
  - This test should focus on productive language.
  - This test should focus on receptive language.
  - This test should be linked to the CEFR.
  - This test should measure the four skills.
  - This test should measure listening skills.
  - This test should measure reading skills.
  - This test should measure speaking skills.
  - This test should measure writing skills.
  - This test should measure grammatical knowledge.
  - This test should measure lexical knowledge.
  - This test should measure student motivation.
  - This test should measure the pupils' attitude towards language(s) as a school subject.
  - This test should give feedback to the pupils.
  - This test should give teachers the opportunity to give feedback to the pupils.
  - This test should be done on paper.
  - This test should be done in a digital manner.
  - This test should be computer-adaptive.
  - This test starts with easy activities and gradually becomes harder in order to be able to find out the pupils' language level.
5. What is most important to you? Give a score from 1 to 5.
- The variation in skills which is measured (1) or the duration of the test (5).
6. How long can the test take?
- 30 min
  - 50 min
  - Longer than 50 min
7. Do you have any other remarks or issues/worries you would like to see addressed?

## Appendix B: Benchmark texts and descriptors for all levels

Benchmark text	Descriptors
<p>Above A2</p> <p><i>Thomas went to the shop with his mom. After Looking at all the skateboards he asked Jon the shopkeeper, "can I try that one". And he pointed at a beautiful black and green skateboard.</i></p> <p><i>"Of course" Jon said. And 10 seconds later Thomas was skating in the store.</i></p> <p><i>Wow i will buy it Thomas said, handing his money to Jon. How nice said his mom, go skate all te way home. Ha ha, said Thomas and so he did he skated all the way home.</i></p> <p><i>The End</i></p>	<p>–The <b>message is clear</b>.</p> <p>–Overall <u>high level</u> output.</p> <p>–<u>Grammar</u> is mostly correct.</p> <p>Multiple tenses are used ('went', 'will buy').</p> <p>–Varied <u>vocabulary</u> ('shopkeeper', 'handing money', 'all the way home').</p> <p>–<u>Linking words and conjunctions</u> are used (more than only 'and')</p> <p>–The text is <u>creative</u>. The amount of text is higher than expected. The learner is not afraid to take risks. ('handing his money to Jon', 'after looking at all the skateboards...')</p> <p>–<u>Mistakes</u> result from taking risks (using language which is of a higher level, but maybe not yet completely mastered).</p>
<p>A2</p> <p><i>Tina and Tom whent to a shop because Tom wanted a skateboard. So Tom shose a board and tested it and he liked that board so he bought it.</i></p>	<p>–The <b>message is clear</b>.</p> <p>–Overall the output is <u>rather short</u>.</p> <p>–<u>Grammar</u>: the writer tries to use different tenses and is often successful when doing this (e.g. 'whent', 'shose', 'tested'). The grammar use does not lead to misunderstandings.</p> <p>–<u>Vocabulary range</u> is rather basic. Variation in choice of words is quite limited (e.g. repetition 'board') and the writer often chooses words which are related to Dutch (e.g. cognates).</p> <p>–Simple <u>linking words and conjunctions</u> are used in a correct manner. The writers goes beyond coordination (more than just 'and').</p> <p>–The text is <u>not very creative</u>. The text <u>length</u> is rather <u>short</u>.</p>
<p>A1</p> <ol style="list-style-type: none"> <li>1. <i>A boy an a girl go's to a skatboardshop</i></li> <li>2. <i>The boy asks if he kan trie one</i></li> <li>3. <i>He tries one</i></li> <li>4. <i>He likes it an then boat</i></li> </ol>	<p>–The <b>message is clear</b>.</p> <p>–Overall the output is <u>rather limited</u>.</p> <p>–<u>A lot of grammatical mistakes</u>. The learner tries to use the correct form of tenses but often makes mistakes. ('go's')</p> <p>–<u>Vocabulary range</u> is rather limited. Words which are known often are similar to the Dutch translation. ('skateboard', 'shop')</p> <p>–<u>Spelling</u>: more than a letter which is missing. Spelling is often based on pronunciation.</p> <p>–Use of <u>linking words and conjunctions</u> is limited. (not more than 'and' or 'or')</p> <p>–The text is <u>not creative</u>. The amount of text is limited.</p>

(continued)

<p>Below A1</p> <ol style="list-style-type: none"> <li>1. <i>hmmm...</i></li> <li>2. <i>O hi.</i></li> <li>3. <i>It's really cool!</i></li> <li>4. <i>Perfect</i></li> </ol>	<p>–The <b>message is not clear</b>.</p> <p>–The writer uses English but the meaning of the text is unclear without the visuals. Understanding comes from the interpretation of the reader rather than from the skills of the writer.</p> <p>–<u>Grammar</u> is <u>mostly wrong</u> or the amount of text is very minimal and it is hard to tell whether it is correct or not.</p> <p>–<u>Vocabulary range</u> is limited. Words show a clear link with Dutch words. ('cool', 'perfect')</p> <p>–<u>Spelling</u>: more than a letter which is missing. Spelling is often based on pronunciation. The amount of text is so minimal, it is hard to comment on the spelling.</p> <p>–<u>Linking words and conjunctions</u> are not or hardly used.</p> <p>–The text is <u>not creative</u>. The amount of text is limited.</p>
<p>No output <i>No text</i></p>	<p>–No or hardly any English was used in the text. –Insufficient overall.</p>

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# Using Speech-to-Text Applications for Assessing English Language Learners' Pronunciation: A Comparison with Human Raters



Akiyo Hirai and Angelina Kovalyova

**Abstract** With the growing influence of technology in the English as Foreign Language (EFL) classroom, automatic speech recognition (ASR) has been receiving a great deal of attention as a tool for pronunciation practice. In particular, the immediate feedback it provides about the level of accentedness and comprehensibility of a user's speech keeps the interest growing. This chapter focuses on the use of speech-to-text (STT) applications, a variation of ASR technology, to explore the potential of using such applications to evaluate the pronunciation of adult EFL learners with different first languages (L1). The chapter discusses the use of ASR in the English language classroom context. It focuses on the accuracy and reliability of five current STT applications (Google Docs' Voice Typing, Windows 10 Dictation, Apple's Dictation, a website service "Dictation.io," and the iOS application "Transcribe"). The chapter concludes that, with a 50–70% accuracy rate, speech recognition still has room for improvement when used by EFL learners. However, it is the absence of perfect speech recognition that helps EFL learners identify their pronunciation errors. Even more so, teachers can rely on STT applications as the pronunciation assessment of these applications was found to be consistent with the pronunciation evaluation by human raters.

**Keywords** Automatic speech recognition (ASR) · Speech-to-text applications · Pronunciation · Accuracy · Adult EFL learners

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## 1 Background of ASR and STT Technology

The COVID-19 pandemic has left a definitive mark on how humans interact with technology. Rapid digitalization of many spheres of life has created a new normal. It has forced many industries, including education, to test new digital solutions to keep up with increasing demand. One such growing area of interest concerns integrating automatic speech recognition (ASR) technology into our lives. This has seen significant improvements since the early 90s, when decoding the human voice using a computer was seen as experimental (Kincaid, 2018).

Traditional ASR technology involves a process whereby human speech is received, decoded, and transformed into text by a computer program as a part of human-computer interaction (Microsoft, 2004). ASR technology has played an active role in many areas of our lives, beyond our expectations. Digital assistants such as Apple's Siri and Amazon's Alexa help us navigate our smart homes and use digital services. Dictation and speech-to-text (STT) tools assist us in our work environments, allowing us to quickly write down meeting minutes or important ideas using only our voice. Voice calls to public or private services are often accompanied by computer-assisted dialogue that requires callers to answer questions to verify their identity or make an appointment (REV.com, 2020). Moreover, recent advancements in artificial intelligence (AI) and natural language processing (NLP) have pushed ASR technology to new limits, bringing hope that language recognition will become a ubiquitous service.

As the quality of digital services grows, it is natural that ASR technology has shown great potential in the context of education, STT technology being one of its most common applications. STT technology—sometimes referred to as speech-to-text recognition (STR) technology—is an extension of ASR technology in that human speech recognized by ASR software can be transcribed into text in real-time (Hwang et al., 2012, p. 368). In other words, text spoken by a person is displayed in a word processor or other text applications, allowing us to see how accurately the ASR technology recognizes human speech. Some common examples of STT applications include Google Docs' Voice Typing function, Apple's Dictation tool, Dragon Speech Recognition Solutions, and Speechnotes.

Even though these applications are not necessarily designed for language learning purposes, they are becoming a prominent tool in language learning. Multiple studies have shown that ASR tools can support classroom activities and have great potential to assist with language learning (e.g., Hwang et al., 2012; Liakin et al., 2014). Therefore, the conceptual framework of this chapter will focus on observing the potential of STT applications in recognizing the speech of adult non-native speakers (NNS) of English with various first language (L1) backgrounds. The study, used as a backbone for this chapter, illustrates the correlation between human and machine evaluation of NNS speech and discusses the accuracy and reliability of the five STT applications, providing practical advice for their classroom use.

## 2 STT Technology in EFL Classroom

References to educational research related to ASR technology date back to Coniam (1998), who explored the voice recognition ability of Dragon Systems software by conducting an experiment whereby a group of English language learners read a text to the ASR program. The paper concluded that speech recognition at that time still needed to be trained by every single speaker to be effective. Since then, several research attempts have been made to test various aspects of ASR technology. In general, earlier studies focused on observing correlations between human pronunciation scores and ASR software evaluation and analyzing whether human speech could be successfully assessed at all. In contrast, more recent studies already aim at understanding how ASR software detects pronunciation errors and how similar this process is to human assessment (O'Brien et al., 2018). In the foreign language learning context, the focus is largely on finding ways to help language learners improve their pronunciation

Liakin et al. (2014), for example, focused on helping learners of French improve the pronunciation of the French /y/ sound by using Nuance Dragon Dictation's ASR technology. The experiment involved three groups of learners of French: the non-ASR group, which practiced pronunciation while receiving feedback from the teacher; the ASR group, which practiced pronunciation and received written feedback from an ASR application; and the control group, which practiced pronunciation with a teacher and received no feedback. The group that practiced pronunciation with ASR weekly and received written feedback was the only group that significantly improved pronunciation of the French /y/ sound.

Besides helping to improve individual pronunciation, ASR technology can be used to encourage students' interactive speaking practice. Ahn and Lee (2016) utilized *English 60 Junior*, a specially designed mobile-based learning system with integrated Google Voice ASR, to allow a group of Korean middle-school students to practice English conversation. Students noted that written feedback provided by the ASR technology became a valuable tool for analyzing their pronunciation and that the application gave them more opportunities to practice speaking and made doing so more interactive (pp. 783–784).

Evers and Chen (2020) observed how different learning styles (visual/verbal) and other types of feedback affected English as a Foreign Language (EFL) adult learners who practiced pronunciation using ASR technology. Out of three groups (1–receiving pronunciation feedback from a teacher, 2–receiving feedback from ASR and peers, and 3–receiving feedback only from ASR), the second group showed the most significant improvement in pronunciation performance in both learning styles (conversation/verbal and reading/visual). McCrocklin (2019) also compared the pronunciation performance of different L2 EL groups (one with entirely face-to-face instruction and another with hybrid instruction where half the time was devoted to using the ASR dictation program (Windows Speech Recognition)). While the results didn't show any statistically significant differences

between the groups, the study concluded that ASR technology could complement face-to-face pronunciation training.

Thus, ASR technology is gradually being utilized as a supplementary tool in language learning, helping with accent training and providing additional opportunities for speaking practice.

### 3 Constraints of STT Technology

From a technical standpoint, the claim of high speech recognition accuracy is the most significant selling point for ASR tools' progress. In 2017, Google claimed to have reached a 95% accuracy rate for U.S. English (Worthy, 2019), while Microsoft achieved 93.1% accuracy (Hachman, 2017). These numbers suggest that ASR technology has already reached human-like comprehension and can recognize human speech with minimal errors.

However, it is important to acknowledge the experimental conditions in which such high accuracy rates were achieved. Gevirtz (2019) pointed out that both Google and Microsoft trained and validated their ASR systems using the National Switchboard Corpus (Godfrey & Holliman, 1993), a small database of phone calls in U.S. English carefully prepared for linguistic research. Such a data set is somewhat limiting as it does not include today's many English language varieties. Thus, judging from the results, ASR systems cannot offer the same potential to the wider English-speaking community, let alone to learners of English, whose language still needs improvement.

When it comes to accent recognition by STT tools, some variation in accuracy rate has been reported even among native English speakers (Koenecke et al., 2020, pp. 7684–7685). It is thus conceivable that non-native speech would heavily affect ASR performance. A study commissioned by the Washington Post (Harwell, 2018) discovered that speech performance in non-native accents (i.e., Spanish, Chinese, and Indian) significantly affects the accuracy rate of English speech recognition. Google Assistant and Amazon's Alexa performance was up to 30% less accurate when non-American accents were used with their speech recognition systems compared to native speakers, which had 91.8% and 91% accuracy rates, respectively. It has become clear that modern ASR systems need to expand their data sets in order to accommodate a wider population.

Besides the ASR's accuracy rate variation among native speakers (NS) or between NS and NNS, its accuracy rate also varies significantly depending on other factors. The most common issues hindering ASR's accuracy include different kinds of background noise, the use of rare words and jargon, multiple speakers, non-fluency features, and lack of training to have ASR systems get used to recognizing the user's pronunciation (Gevirtz, 2019; Ito, 2014; Jarnow, 2016; Way et al., 2008). Thus, in a situation whereby two or three people with accented English are having a meeting or discussion and are using industry-specific jargon, ASR would provide

a transcription of the conversation with a significant number of errors that would require further review and correction. The National Institute of Informatics in Japan points out that raw human interaction is too chaotic for speech-recognition systems that can provide around a 90% accuracy rate only when text designed for speech recognition has been prepared ahead of time (Ito, 2014, p. 10). This is because a speaker, when producing spontaneous speech, can suffer from non-fluency features such as false starts, hesitations, and repetition that can leave the speech disorganized and difficult to analyze.

These limitations of ASR technology may leave teachers discouraged about the success of speech recognition systems' use in a classroom. Also, the low accuracy rate of speech transcriptions due to frequent grammatical and lexical errors made by language learners will, in turn, leave students demotivated. For example, Bajorek (2017), in her review of modern software for practicing pronunciation, attempted to analyze the pronunciation presentations of Rosetta Stone, Duolingo, Babbel, and Mango Languages. As a result, Bajorek concluded that, despite their potential, each application has specific limitations; thus, they do not give enough support for pronunciation training for a language learner using these applications independently. Therefore, she commented that it was no surprise that teachers are unaware of how to use ASR technology effectively or are hesitant about how they should use it (Bajorek, 2018, p. 3).

Considering Bajorek's remark that ASR technology is still developing and that not all tools would be useful, McCrocklin (2015, p. 131) also recognized the current limitations of ASR technology, in that such tools may not give perfect feedback because some are too sensitive to pronunciation errors while others are too forgiving. This is where students can benefit from the guided feedback and support provided by a teacher. In addition, when using STT technology in an EFL setting, it is important to be aware of the benefits and limitations of speech recognition technology.

#### **4 A Study on Adult NNS Speech Recognition: Current Experiment Research Findings**

ASR software holds undeniable potential for language-learning purposes. Still, since the success of its execution heavily depends on the software's capabilities and the surroundings, it is essential to understand the degree to which such software can replace human feedback. If we aim to use ASR technology in an EFL classroom, we cannot blindly rely on reported accuracy rates as current ASR software is assessed through the evaluation of speech by NS (Gevirtz, 2019). Thus, it is important to explore the speech recognition context of speech by NNS and understand how accurate the existing ASR technology can be and how reliable it is compared with human speech assessment.

## 4.1 *Applications Analyzed in the Study*

These days, there are many different ASR options, from free, easy-to-use applications to commercial tools for professionals that focus on specific jargon. How can a teacher know which tool would be safe to use in a classroom?

Our study focused on five STT applications available to many users. These applications include Google Docs' Voice Typing, Windows 10's Dictation, Apple's Dictation, the Dictation.io web service, and the "Transcribe" iOS application. Each of these tools is free (although "Transcribe" has an additional subscription option), and they cross various platforms so that users do not feel restricted in their choices. They are described based on their performance as of spring 2020.

A brief overview of these applications can provide information about the capabilities and limitations of current, readily available ASR technology. If a teacher is familiar with Google's services, trying out the Voice Typing function of Google Docs might be the easiest option since it is a feature of the cloud-based Google Docs and Google Slides services (accessed through a Chrome browser). One needs to open a new Google Docs file, select the "Tools" tab, click on "Voice Typing," and start speaking; the program will then begin to write down the user's utterances immediately. Another option is Apple's Dictation, a built-in ASR tool available on iOS devices. This can be accessed through the "Dictation" settings on a laptop or by tapping on the microphone sign on an iPhone or an iPad keyboard. Likewise, Windows 10's Dictation is part of the Windows software package and can be accessed through the "Speech" section of the platform's settings. It is necessary to follow up by pressing a combination of the Windows logo key and "H" to prompt the dictation service. Next, the Dictation.io web service can be accessed through a browser, regardless of the operating system or browser type, and perhaps provides the easiest interface and most user-friendly experience. These four STT tools offer synchronous speech transcription through which a person can speak and instantly see a transcription of what they have said. The final of the five analyzed STT tools, an iOS mobile application, "Transcribe," is an example of asynchronous ASR analysis. A user has to upload an audio file into the application to receive an analysis and a transcription of the speech. The application also predicts transcription accuracy in percent (%).

Each of these applications has its strengths and weaknesses. They all support many languages; for example, Google Docs' Voice Typing supports up to 119 language varieties (Google., n.d.), and Dictation.io attempts transcription in 134 language varieties. This is especially helpful in an EFL classroom, for example, when a student speaks a certain variety of English (or even wants to train a particular accent) as these services can differentiate between the pronunciation of Canadian or New Zealand English, English in the Philippines, and so forth. These STT applications also generally require an internet connection to provide a quality service as they use cloud storage to increase computational power for ASR analysis (Altviz. co., 2019, p. 4). Finally, it is worth remembering that some STT applications (i.e., Windows 10's Dictation) can be trained to better recognize an individual's

pronunciation over time. This might have its benefits and challenges too. When the application becomes accustomed to a user's pronunciation, it may give learners correct transcriptions even though their pronunciation remains accented. Overall, when using any of these applications, a teacher must first test it to evaluate whether and how STT technology could be incorporated into pronunciation practice in their EFL classroom.

## ***4.2 Accuracy of Pronunciation Assessment with STT Applications***

To estimate ASR accuracy from adult NNS English speech, we conducted a research project to test the five STT applications. Thirty university students, all NNS of English (18 Japanese, 4 Chinese, 3 Korean, and 5 other nationalities including Czech, Hungarian, Pakistani, French, and Taiwanese) were asked to respond to four test tasks, having their speech first recorded and then transcribed by each of the five applications, as well as by a human. Regarding students' English proficiency, at the beginning of the experiment, the participants were asked about their language learning background, including whether they had taken a language proficiency test. According to the questionnaire, 4 learners had attained the A1 level of English proficiency (CEFR framework), 4 attained B1, 15 attained B2, and 7 attained C1 level. None of the participants reported A2 or C2 levels of English proficiency.

The tasks involved reading out loud short sentences with around 25 words each (Task 1: ReadS), reading out loud a long passage with approximately 100 words (Task 2: ReadL), retelling a long passage that had previously been read (Task 3: Retell), and answering three questions (Task 4: QA). Tasks 1 and 4 also included loan words from Japanese, such as "haiku," "bukatsu," "sempai," and "kouhai." These tasks were designed to test different aspects of ASR transcription ability in an NNS speech.

As explained earlier, the five STT applications involved were the Voice Typing function of Google Docs, Windows 10's Dictation tool, Apple's Dictation, the Dictation.io web service, and the "Transcribe" iOS application. These were chosen for their accessibility and variety. The speech was recorded in a quiet room using an iPhone Voice Memo application and a microphone.

### **4.2.1 Effect of Speech Task on Transcription Accuracy**

The accuracy rate of each application was determined by calculating the number of correctly transcribed words by each STT application against the total number of words received from human-made transcriptions. As shown in Table 1, the results varied depending on the application and the type of speech task performed, with an average accuracy rate of 50–70% across the five STT applications. Of these,



**Table 1** Transcription accuracy rates of nonnative speech using five STT applications (N = 30)

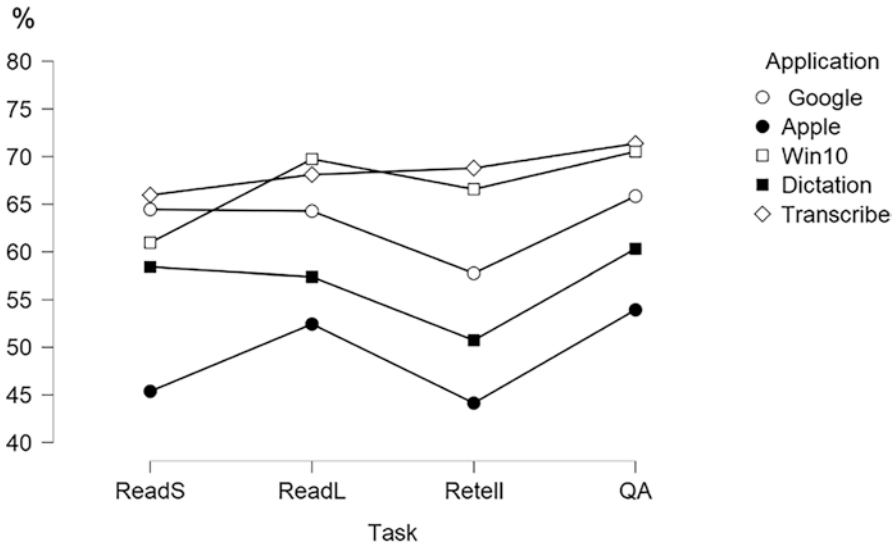
Application	Task 1: ReadS		Task 2: ReadL		Task 3: Retell		Task 4: QA		Total	
	<i>M</i> (%)	<i>SD</i>	<i>M</i> (%)	<i>SD</i>	<i>M</i> (%)	<i>SD</i>	<i>M</i> (%)	<i>SD</i>	<i>M</i> (%)	<i>SD</i>
Google	64.46	19.90	64.28	19.53	57.76	22.77	65.85	17.84	<b>63.09</b>	19.76
Apple	45.38	18.38	52.44	17.45	44.14	22.50	53.94	16.83	<b>48.97</b>	18.87
Windows 10	60.97	17.59	69.75	13.87	66.58	20.13	70.54	13.94	<b>66.96</b>	16.55
Dictation	58.42	19.41	57.39	19.23	50.74	24.11	60.33	16.50	<b>56.72</b>	19.76
Transcribe	65.97	18.16	68.11	16.72	68.80	15.97	71.38	12.64	<b>68.57</b>	15.66
Total	<b>59.04</b>	19.58	<b>62.39</b>	18.19	<b>57.60</b>	22.68	<b>64.41</b>	16.57		

ReadS (reading short sentences), ReadL (reading a passage), Retell (retelling the passage), and QA (answering questions)

“Transcribe,” and Windows 10’s Dictation tool showed the best performance (68.57% and 66.96%, respectively); this was nearly 20% higher than Apple’s Dictation (48.97%). Thus, there was a variation in transcription accuracy across the STT applications. In addition, when transcribing the speech of NNS in English, the accuracy was significantly lower than the industry average for NS speech in English, as mentioned in section 3.

From the viewpoint of the type of speech (i.e., tasks), on average, the Retell task showed the lowest accuracy result (57.6%). This can be explained by the fact that, compared with the other three tasks, the Retell task had a higher chance of being affected by various intrinsic aspects of natural spontaneous speech, such as self-correction, repetition, hesitation, and false starts. In other words, students had to produce a long string of speech as the content and amount to be retold had been specified in the original passage. In addition, the ReadS task (reading short sentences) was relatively poorly transcribed (59.04%), perhaps because each sentence was too short for the STT applications to predict the following words. Also, the sentences contained loan words, which the applications might not transcribe correctly in their English mode.

An additional analysis of the interaction between speech task type and STT application was carried out using a two-way repeated-measures ANOVA test to see if different types of speech production would influence the ASR process. The result revealed a significant interaction between tasks and applications ( $F(7.36, 213.56) = 4.42, p < .001, \eta_p^2 = 0.13$ ), meaning that the type of speaking task (i.e., various aspects of speech) affected the accuracy rate of transcription of each STT application differently. With further analysis of multiple comparisons, it was found that Windows 10’s Dictation tool showed better results when transcribing the ReadL tasks (69.75%) containing error-free, syntactically coherent sentences (see Fig. 1). However, it was relatively weak in ReadS tasks (60.97%), indicating that Windows 10 can increase the prediction of words used next in long strings of natural speech, but it may have difficulty doing so in such short strings. On the other hand, the performance of “Transcribe” was relatively stable across the different tasks and was the best performing of the five applications.



**Fig. 1** Comparison of five applications across four speech tasks. (ReadS (reading short sentences), ReadL (reading a passage), Retell (retelling the passage), and QA (answering questions))

These results help us understand that STT applications have strengths and weaknesses depending on the type of speech. A heavier number of transcription errors appears from using a lexicon that does not belong to the language model of ASR for a particular language (such as saying foreign words when using an ASR system for English). Transcription errors are also significant when the flow of speech is interrupted by repairs, repetition, hesitation, and other non-fluency features common in spontaneous speech. Having avoided these issues, transcription performance still suffers from pronunciation errors, which many NNS make in even prepared or simple read-aloud speech.

Each of these issues is inherent in English language learners to a different degree, depending on whether they use a word from their L1 due to a lack of English vocabulary knowledge, make repairs as they try to correct their grammar, or have a stronger accent or come from a culture where their L1 phonetic alphabet drastically differs from English.

#### 4.2.2 Effect of Pronunciation Features on Transcription Accuracy

Despite many factors that affect the accuracy of STT transcriptions, transcription errors can help EFL learners assess their pronunciation, especially when they produce spontaneous speech. During this research project, it was found that automatic transcription was affected by particular pronunciation features of NNS. For example, Japanese speakers, while performing speaking tasks, maintained some

pronunciation errors attributed to the Japanese phonetic alphabet (L1) in English (L2) (Koon, 2018; Vaughn et al., 2018).

One of the more obvious errors has its roots in the influence of *katakana*, which is a set of Japanese words adopted from other languages and made to sound somewhat like the original word from another language (a typical example of this is the word “アイスクリーム” borrowed from the English “ice cream” and pronounced as /ʌisukur'i:mu/). The issue lies in the transfer of *katakana* Japanese pronunciation into English pronunciation, which happens by attaching extra vowels after every consonant. In this way, in our experiment, the word “etiquette” (/ˈetɪkɛt/) became /ɛtʃiketto/ or “bank” (/bˈæŋk/) became /bʌŋku/. Accordingly, an ASR system for the English language offered an alternative English word as a transcription that matched the pronounced form. For example, the pronunciation of /ɛtʃiketto/ returned “educate” or “adequate.”

Problematic pronunciation errors become especially clear with pronunciation errors in minimal pairs—words that differ only in one phonological element, such as “fan” and “van.” Similarly, considering the difficulty of distinguishing /l/ from /r/ in Japanese, it was no surprise that STT applications often mistranslated words containing those phonemes when pronounced by Japanese EFL learners. Transcription errors like this can provide valuable feedback for EFL learners with various L1 backgrounds to locate pronunciation errors as the wrongly transcribed words will point to the deviation from the pronunciation norm (i.e., more recognized pronunciation varieties) (Table 2).

### 4.3 Reliability of Pronunciation Assessment with STT Applications

Considering the above, it is worth examining whether STT applications can assess the pronunciation of English by NNS. Specifically, does an STT application’s pronunciation assessment correlate with that of a human rater? How much can we trust the technology? To answer these questions, a human rater also evaluated the

**Table 2** Examples of transcription errors in words with /l/ and /r/ sounds

Original	Wrong transcriptions
Lunch	Branch, ranch
Play	Pray
School	Scooter
Reading	Leading
Sleepy	Sweet
Culture	Carter
Remember	New member

participants' speech. Then the evaluation scores were compared with the accuracy scores of the STT applications.

Regarding the assessment strategies of STT applications, it has been noted that these are rather sensitive to spontaneous speech and stronger accents (Gevirtz, 2019). Thus, a pronunciation assessment rubric for a human rater was first created with the same issues in mind, focusing on the frequency of pronunciation errors, prosodic features, and accent strength. The rubric contained a 4-point scale, where 4 was the highest score (Table 3).

Evaluation of pronunciation by a human rater was conducted by assigning a pronunciation score to each participant's performance in the ReadS, Retell, and QA tasks. ReadL (Task 2) was excluded because the type of task was considered similar to Task 1 in this assessment context. Approximately one-quarter of the participants' performances were assessed by two raters – a near-native proficiency English teacher and a high-proficiency graduate student in the English department. As the Cronbach's alpha for the interrater reliability of the two raters was sufficiently high ( $\alpha = .91$ ), the rest of the scoring was done by a single rater, the English teacher. Once the human rating of the participants' pronunciation was completed, the scores were converted into percentages (where 4 = 100%), and a Pearson product-moment correlation was conducted between the pronunciation scores by human raters and the average transcription accuracy scores of the STT applications to see how closely the human rater and STT applications assessed NNS English speech.

#### 4.3.1 Correlation Between STT Application Evaluation and Human Rater Evaluation of NNS Pronunciation

To compare the STT accuracy rates with the human assessment scores on the same percentage scale, we converted the human scores (using a pronunciation rubric) into a percentage and then employed the Pearson correlation test. The overall correlation coefficient across the three speaking tasks revealed a sufficiently high correlation between STT application assessment and human rater assessment ( $r = .69$ ). In other words, there was a similar tendency in how a human rater and ASR technology would evaluate human speech. As shown in Table 4, in particular, the strongest

**Table 3** Pronunciation evaluation rubric

Score	1	2	3	4
Evaluation criteria	The accent is strong, requires a lot of effort from a listener to understand the meaning, or some parts are unintelligible. Pronunciation errors and correction of words are present.	The accent is present, but the meaning is intelligible. Few pronunciation errors and possible hesitation.	The accent is recognizable but has occasional characteristics of major varieties of English. Pronunciation is generally free of errors and lacks prosodic features.	The accent reflects the major varieties of English (native-speaker-like pronunciation). Well-paced flow.

**Table 4** Correlations between five STT applications' mean accuracy scores and human rater scores (N = 30)

Score source	Task 1: ReadS			Task 3: Retell			Task 4: QA		
	Mean (%)	<i>SD</i>	<i>r</i>	Mean (%)	<i>SD</i>	<i>r</i>	Mean (%)	<i>SD</i>	<i>r</i>
5 STT app	59.04	17.08	.72	57.60	19.53	.75	64.41	13.20	.65
Human rater	72.50	23.07		71.67	22.49		73.33	23.61	

ReadS (reading short sentences), Retell (retelling the passage), and QA (answering questions)

correlation was observed in the analysis of the Retell task ( $r = .75$ ), which indicates that the strength of the relationship (i.e., effect size) is quite large and more than half ( $r^2 = .56$ ) of the variance scored by the human rater can be explained by the variance scored by the five STT applications. This may be partly because the accuracy scores of the STT applications for the Retell task were the most spread out (see the *SD* of the STT applications), making the score distribution more equivalent to that of human rating. More specifically, since retelling was the hardest task of the three because it required a heavy cognitive load to recall a story in detail and then retell it in the learner's own words, both the STT applications and the human rater needed to be more detail-oriented and careful when assigning a pronunciation score. This may result in a wider score distribution and reflect more on NNS pronunciation variabilities through human and STT evaluations.

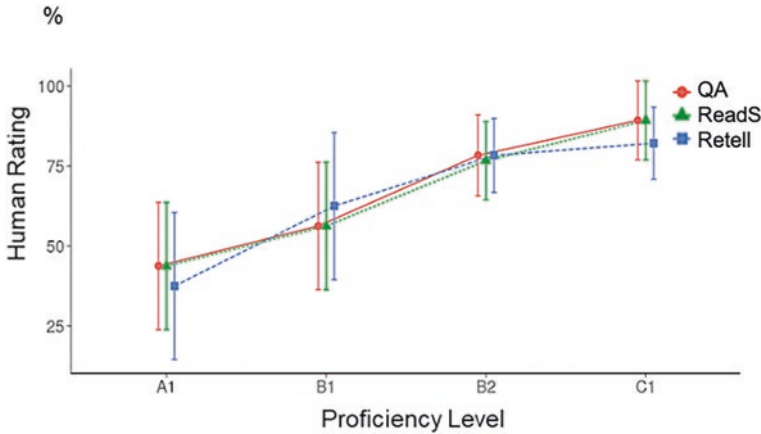
Notably, although the application accuracy rates and human assessments being compared here do not take exactly the same approach to evaluate NNS pronunciation, the overall trend of pronunciation accuracy evaluation between them is very similar; that is, the mean score of the QA task is the highest, followed by the ReadS and the Retell tasks. Thus, it is safe to say that the STT applications can be relied on in assessing NNS pronunciation when they are used for low-stakes classroom pronunciation assessment.

### 4.3.2 Proficiency Level (CEFR) in the Context of Speech Assessment

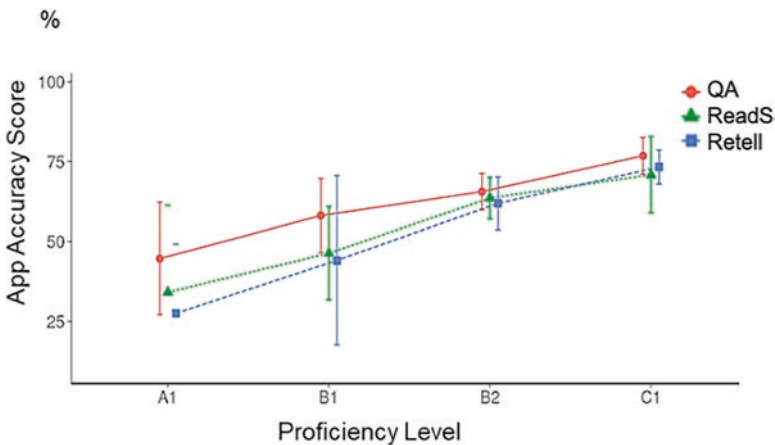
NNS's proficiency level is another metric that has not been discussed in the context of pronunciation. As mentioned in section 4.2, the participants' English proficiency levels varied between CEFR A1 and C1.

To examine whether proficiency level can predict the success of speech assessment by STT applications and human raters, an additional two-way mixed ANOVA test was conducted on the between-factor of proficiency (four levels) and within-factor of task (Tasks 1, 3, and 4). Figure 2 represents levels of interdependency between speaking task types and individual CEFR levels based on the pronunciation scores of the human rater, and Fig. 3 represents the scores assessed by the five STT applications.

Both figures confirm relative consistency between participants' English language proficiency levels and their assigned pronunciation scores. In other words, participants' pronunciation scores increased in line with their proficiency levels, whether



**Fig. 2** Mean pronunciation score by a human rater in the context of speaking task types and proficiency rate of each participant (N = 30)



**Fig. 3** Mean accuracy rate by 5 STT applications in the context of speaking task types and proficiency rate of each participant (N = 30)

they were analyzed by a human rater or an STT application. Despite the overall consistency between human and machine evaluation, the two graphs showed slight, but noticeable differences. The graph with the human rater scores shows an overall consistency of pronunciation evaluation at any language proficiency level. However, the Retell task score slightly deviates from the mean values of the other two tasks even among participants with a C1 level, which implies that the Retell task was cognitively more demanding than the other two.

Conversely, the graph with the STT application accuracy scores reports a more significant gap in the evaluation of different speaking tasks of participants with a lower English language proficiency level. In particular, participants with A1 and B1

levels of proficiency were evaluated with much less consistency than participants with a B2 level of English. At A1 and B1 levels, participants performing the QA task tended to receive higher accuracy scores than when performing the Retell task. This may be because STT applications' accuracy rates are sensitive to aspects of language production other than pronunciation, such as grammatical errors, syntactic issues, and other non-fluency features. Thus, the Retell task, which was the most difficult, affected the performance of A1-level participants more than the other tasks and the other proficiency learners.

Further analysis of the relationship between the accuracy rate of the STT applications and each task offers more insight into which of the five applications can provide the highest accuracy of evaluation, judging by the language learner's proficiency level. A Pearson correlation test between proficiency levels and each STT application showed that "Transcribe" and Windows 10's Dictation tool related most strongly to proficiency levels (see Table 5).

In particular, "Transcribe" showed the strongest correlation with proficiency in the QA task ( $r = .80$ ) followed by the ReadS task ( $r = .74$ ) and the Retell task ( $r = .73$ ). The Windows 10's Dictation tool was also reported to have strong positive correlations, specifically in the Retell task ( $r = .78$ ) and the QA task ( $r = .77$ ). These results are consistent with the STT application accuracy results, where "Transcribe" and Windows 10's Dictation tool showed the best performance. In contrast, Apple's Dictation tool and Dictation.io remained consistent with lower accuracy scores; this may indicate that these applications do not have high adaptability with NNS pronunciation yet, as compared to the other applications.

#### 4.4 Summary of Results

ASR technology, particularly STT applications, has been shown to have made significant progress in analyzing English speech by NNS. However, STT applications are affected significantly more by the English speech of NNS than by NS, despite the user's expectations (Harwell, 2018). The quality of STT analysis of NNS speech can be observed by the accuracy rate of STT transcriptions and reliability of STT assessment against human rater assessment. The five free STT applications chosen in our study recognized NNS speech at a rate of 50–70% accuracy. Of them, "Transcribe" and Windows 10's STT tools provided the best NNS speech transcription, with 68.57% and 66.96% accuracy, respectively. The other three STT

**Table 5** Pearson's correlations between STT applications' accuracy scores and each task

	Google	Apple	Windows	Dictation	Transcribe
Task 1 (ReadS)	.75**	.54**	.65**	.56**	.74**
Task 3 (Retell)	.69**	.60**	.78**	.70**	.73**
Task 4 (QA)	.57**	.58**	.77**	.48**	.80**

$p < .001^{**}$



applications—Google Docs’ Voice Typing, Apple’s Dictation, and Dictation.io—reported less accurate results. These accuracy rates can be affected by several factors, such as surrounding noise, participation of multiple speakers, and features of spontaneous speech. Of these, this study focused on STT applications’ ability to transcribe different types of human speech. Interestingly, speaking about a comfortable and predictable topic in the QA task resulted in a higher accuracy rate. In contrast, the Retell task—another type of spontaneous speech that required more complex cognitive and memory load—resulted in more errors associated with non-fluency features. Additionally, individual pronunciation features, recognized as accented speech, also affected the accuracy rate. Transcription errors were more common in the case of speakers whose pronunciation was strongly accented due to their L1 interference. For example, Japanese speakers who had difficulty distinguishing between /l/ and /r/ encountered more transcription errors with words containing those sounds.

Regarding the reliability of the machine evaluation, it was found that human evaluation of NNS speech closely correlated with the accuracy rate of STT applications ( $r = .69$ ). Despite some disparity in the assessment method and scores, the evaluation tendency remains aligned between human and machine assessment. It was also curious to see how individual proficiency levels correlated with pronunciation evaluation. A comparison between human rater evaluation and machine evaluation showed that language learners with lower proficiency levels (A1 and B1) could be more affected by inconsistent assessment of STT applications. Despite that, two applications (“Transcribe” and Windows 10’s Dictation tool) still strongly correlate proficiency level and speech performance.

These results must be considered within the context of a few limitations that could have affected the study. The correlation between app accuracy scores/ human evaluation and proficiency levels of the participants (Figs. 2 and 3) is based on a rather small sample. As was mentioned above, the sample of 30 participants consisted of 4 learners of A1 level of English proficiency, 4 of B1 level, 15 of B2 level, and 7 of C1 level. The sample needs to be bigger to receive a more accurate analysis. Also, this study did not contain a control group with NS English speech, which should be addressed in future studies. Thus, the study’s results analyzing NNS English speech are discussed, keeping in mind other studies on the topic.

Regardless of the limitations, the results help us recognize the current state of ASR progress in assessing NNS speech. While ASR technology still has room to grow, perhaps the absence of perfect NNS speech recognition ability could be of enormous help in recognizing pronunciation errors.

## 5 Practical Advice for Using STT Technology

It is important to follow some ground rules and recommendations to help English learners have the best pronunciation practice experience with ASR technology. The first thing to consider is the STT platform that will be used for pronunciation

practice. This may depend on the software and hardware available at hand. Some schools strictly control software that can be accessed on school grounds. Other institutions may be flexible but do not have funds to provide the necessary hardware to individual classes. Computer labs may be occupied with people quietly working on their projects (McCrocklin, 2015, p. 131). In this case, the teacher may ask students to use their smartphones or laptops, but they still need to ensure that all students have access to a selected STT program.

If the choice of ASR technology is not an issue, it would be a good idea to consider an STT application's accuracy and degree of strictness in terms of recognizing the speech of NNS. As observed above, tools such as Windows 10's Dictation function and "Transcribe" have a higher rate of accuracy in speech transcription, which means that students with heavier accents would receive feedback primarily on words with the least accurate pronunciation, while the rest of the speech would be recognized. Whereas if a student maintains a low rate of pronunciation inaccuracies and needs a stricter pronunciation evaluation measure, perhaps using Apple Dictation or Dictation.io would assist them in noticing a higher frequency of pronunciation errors.

Once the STT application has been selected, a teacher can work on developing appropriate tasks for pronunciation practice. These may depend substantially on the English language proficiency of the student, the task itself, and the vocabulary used in the task. If a student has a lower English proficiency level (A1-B1), the tasks need to be more controlled. For example, the tasks may include practicing pronouncing individual words (minimal pairs) or reading sentences or passages of text. Wallace (2016) suggests that teachers provide a transcript with target language that students can read to an ASR program and observe the discrepancies between the original transcript and the text transcribed by the program. From these discrepancies, a teacher can help students make conclusions about their pronunciation errors, and students can try to re-record reading the transcripts. More proficient students can attempt producing spontaneous speech, speaking into a STT application.

However, it is important to remember that the type of speaking task may noticeably affect the accuracy of ASR. As this research points out, spontaneous speech with simple utterances, such as answering easy questions, is relatively easier for ASR technology to process than spontaneous speech from memory, such as retelling. In addition, as students with a lower level of language proficiency are affected more strongly by the type of speaking task, STT applications will deliver a more significant number of transcription errors (being affected by a more considerable amount of non-fluency features and grammatical and lexical errors). Therefore, practicing pronunciation based on a preplanned text may provide the cleanest feedback regarding pronunciation analysis. In other words, reading text aloud can be a good measure of finding out about a learner's knowledge of pronunciation. However, caution is needed in that jargon or loanwords should be avoided to reduce the chance of mistranscriptions because these words are often not included in general language models used by common ASR systems (Gevirtz, 2019).

A separate comment needs to be made about the students' surroundings during pronunciation practice. As ASR technology is affected by noise or speech from

multiple speakers (Gevirtz, 2019), it is important to create a quiet environment and give students specific guidelines before practicing. These guidelines must stress the importance of keeping the environment quiet, with only one person speaking at a time. In addition, users should keep a microphone at a specified distance to avoid “breathiness,” use moderate speed and volume when speaking, give shorter sentences, and reduce pause fillers such as “umm” or “ah” (Shadiev et al., 2014, p. 74). If these conditions are not kept, accuracy can be significantly reduced as it will be difficult for an STT application to recognize students’ utterances.

STT applications will inevitably make some transcription errors (not only through pronunciation mistakes but also from the surrounding conditions and non-fluency features). When a particular word returns a transcription error, that would provide a good opportunity for the learner to check the pronunciation transcription of the word and listen to its correct pronunciation from a digital dictionary. McCrocklin (2015, p. 130) suggested that students should try pronouncing a word up to three times, and if it is still not recognized by the STT application, then the student should move on. Additionally, when practicing specific target words, she suggested that students focus only on the correct pronunciation of those targeted words and not pay attention to other words transcribed incorrectly. Overall, during pronunciation practice, the role of the teacher expands to providing guidance and motivation to students, as well as defining realistic objectives considering the capabilities of STT applications.

## 6 Conclusion

When evaluating the potential of STT applications for adult non-native learners of English to practice pronunciation, it becomes clear that ASR technology still has room to grow. The quality of an ASR’s output can depend on many factors, but once outside factors are eliminated, and suitable technical conditions are met, STT applications can be excellent tools for providing feedback on a user’s pronunciation. STT applications’ tendency to favor the speech of NS can become a valuable measure for teachers and NNS in recognizing language learners’ pronunciation inaccuracies by using the transcription function of STT applications.

The benefit of this process is multifaceted. An adult NNS, who is learning English, can receive useful feedback about their pronunciation ability by reading text to an STT application. The transcription errors visible on display can indicate mispronounced sounds and help identify ingrained pronunciation habits. For a teacher, an STT application can aid with pronunciation assessment. A teacher can prepare simple texts with target vocabulary for students with lower proficiency levels (A1-B1) or encourage higher-proficiency students to practice spontaneous speech with STT applications to help them notice their pronunciation errors. As the process of correcting human pronunciation is time-consuming and should be done on an individual basis, relying on an STT application can save time and provide feedback to a larger number of learners at the same time.

The reliability of machine speech recognition has been addressed through a research study that recognized a sufficiently high correlation between the evaluation of pronunciation by humans and STT applications. Furthermore, the assessment of the relationship between English language proficiency and STT application performance showed the potential of the STT applications to be less accurate with the NNS with lower language proficiency (A1-B1).

Therefore, teachers and language learners must wisely take advantage of the current imperfection of ASR technology until new pronunciation practice tools are developed. It is highly anticipated that the development of AI and NLP will soon result in expanding speech recognition models and increasing the accuracy rate of transcription through additional text analysis algorithms.

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# A Checklist Proposal for Assessing the Potential of Language Teaching Apps



Gloria Luque-Agulló and Encarnación Almazán-Ruiz

**Abstract** The use of mobile applications for English as a Foreign Language (EFL) teaching and learning has become widespread at all educational levels, increasing the difficulty in identifying the most technically and pedagogically suitable application for a specific teaching context. Although digital skills should be a central component in (prospective) FL teachers' qualifications as one of their twenty-first-century skills, teachers may be inadequately prepared to select, evaluate, and use some of the newer technologies, namely mobile apps, to improve the language learning process within their teaching frameworks. Although there is a growing body of research on the evaluation of apps using checklists, very few studies focus on easily applicable, hands-on criteria for selecting and evaluating apps specifically for TEFL. Therefore, this chapter aims to provide a functional, accessible checklist to evaluate apps, enabling prospective and novice teachers to incorporate them into their instruction. The checklist considers technical, methodological, and linguistic features but maintains a focus on pedagogically relevant criteria.

**Keywords** Foreign language teaching · Mobile learning · Applications · Evaluation · Checklist

## 1 Introduction

Some decades ago, technology was incorporated into Foreign Language Teaching and Learning. So much so that new technologies have become an essential tool both inside and outside the classroom. The emergence of applications designed specifically for language teaching and learning has enriched the traditional teaching approach using these digital tools in the FL classroom. However, the wide variety of

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available mobile applications (apps henceforth) makes it especially difficult for teachers to decide which application meets the requirements of their students.

Today more than ever, the need to incorporate these digital tools in the classroom has become essential in many parts of the world. In fact, due to the COVID-19 crisis, teaching had to move to an online environment in many countries, disregarding both the digital literacy of teachers and also the uncertain availability of technological resources tools in the case of learners. Even though technology was previously used with varying frequency, there has been a proliferation of usage in most educational contexts after the COVID lockdown, including EFL materials.

In line with this increased use of technologies, recent European proposals (Digital Education Action Plan, 2020; Redecker, 2017) have contemplated the need to improve the use of digital literacies not only for students but also for teachers as part of their training since they constitute one of the twenty-first-century skills. Besides, teachers are assumed to “be able to effectively use digital technologies for teaching” (Redecker, 2017, p.15). Consequently, digital skills must be part of the training qualifications of prospective English language teachers, who may have experience using apps as learners but lack the preparation to include them as part of their teaching framework (Norris & Kukulska-Hulme, 2017).

This paper aims to raise teachers’ awareness of using digital tools in the foreign English classroom and foster their critical stance on how these apps may constitute a means towards the final aim of effective language learning. Similarly, it attempts to provide a functional and accessible checklist to evaluate apps in view of their technical, pedagogical, and linguistic features while focusing on effective language teaching. The ultimate goal of presenting this checklist is to enable (prospective) teachers to incorporate apps into their instruction successfully.

This paper introduces the different types of mobile applications and reviews their use in FL learning and teaching, as well as their advantages and disadvantages. In the next section, a review of various proposed taxonomies to assess apps’ suitability is developed. Afterwards, a checklist is presented as a proposal to evaluate apps for EFL teaching. Finally, some conclusions are drawn.

## **2 Theoretical Background and Literature Review**

### ***2.1 Types of Mobile Apps***

When introducing mobile apps in the teaching and learning processes, it would be necessary to distinguish the more suitable app for students and the purpose of their use. Moreover, according to Khaddage et al. (2016, p.18), it is advisable to distinguish between the learning that happens in a formal setting and the learning that occurs in an informal one. In general, formal learning happens inside the educational centers, and it follows a formal curriculum. On the other side, informal learning happens outside with the lack of any formal curriculum. Recently, proposals



have been presented showing how valuable it is to integrate informal learning in the formal environment and the usefulness of apps. (Khaddage et al., 2016, p.18). Likewise, Godwin-Jones (2011, p.8) states that “learning becomes more real and permanent when tied to learners’ lives outside the academic environment”, and indeed, mobile devices are a very useful tool to achieve it.

However, as previously mentioned, it is not always easy to decide which type of app is the most appropriate one. Therefore, knowing the different types of applications can be advantageous in determining their suitability and helps the teacher to prepare in advance the technological support and specific device students may need to run the selected app. Besides, the teacher should not assume that all students have a smartphone or that they all use the same operating system on their mobile device. Nonetheless, in the literature, there is a wide agreement distinguishing three main types of apps (Delia et al., 2019; Guler, 2019; Khaddage et al., 2016):

Firstly, *native apps* consist of a software program designed to be operated on a particular platform. In addition, the type of device, its operating system, and the version used must be considered. According to the operating system, users get these apps in the Google Play Store<sup>1</sup> for Android systems and App Store<sup>2</sup> for Apple’s iOS. Once the user has downloaded it to their device, the app runs without connecting to the Internet. Secondly, *web apps* work in any browser installed on an electronic device and need a connection to the Internet. However, one of their advantages is that users always run the most recent version of the app (Delia et al., 2019, p. 2) without any downloading requirement (Guler, 2019). Many of these web apps, such as Google Apps, are open use. They offer a wide range of possibilities for “education and communication” (Amin, 2020, p.400) since they allow users to share files with others and work collaboratively. Thirdly, *hybrid apps* “are mobile web applications packed into a native app” (Serrano et al., 2013, p. 249) because they share properties from both native and web apps. More specifically, users run them on their mobile devices, but they can also be operated on different platforms such as Windows, Android, and iOS.

In addition to classifying the apps according to the operating system, the type of device, and whether an Internet connection is required, it is advantageous to know other classifications made of the apps. As far as the categories of the apps are concerned, users can find up to 24 app classifications in the Apple App Store and 32 in the Google Play Store. However, they can be grouped within the most conventional category list: Educational, lifestyle, social media, productivity, entertainment, and game (Poetker, 2019). Within the apps designed for language learning, Gangaiamaran and Pasupathi (2017) offer a different classification according to learner age: apps for primary learners, secondary learners, and tertiary learners. As previously stated, being aware of these types of apps and different categories constitutes a fundamental step in deciding about their pedagogical use.

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<sup>1</sup> <https://play.google.com>

<sup>2</sup> <https://www.apple.com>

## 2.2 *Using Apps for Language Learning and Teaching: Advantages and Disadvantages*

The rapid advancement of technology and the proliferation of apps in the market make their inclusion in the language teaching-learning process almost unavoidable in many educational contexts around the world. Although the use of apps can be advantageous in learning any foreign language, in this section, we will focus mainly on the English language as there is more literature and it is the most widespread language in the world. However, many of the aspects highlighted below may be valid for learning and teaching other languages.

In the EFL classroom, it has become frequent to introduce the use of apps in combination with other materials and resources. In a study related to adult learning of a foreign language, Chen (2016, p. 49) states that “mobile learning apps provide different multiple channels and modalities [...] to practice language skills”. In his research, apart from offering a theory-based rubric to evaluate the strengths of the English language learning apps selected for the study, the author evaluates those learning apps and classifies them into three categories: vocabulary, language skills, and entertainment.

According to Kusmaryani et al. (2019, p.2), technology provides students with language resources that can help them practice the basic language skills. Besides, using apps offers them the chance to practice the language in formal and informal settings, helping them become independent learners. As a matter of fact, many students use apps in out-of-class time to improve their level in the foreign language and use them as support in their learning process (Steel, 2012). As a result, apps have become an essential part of the blended learning approach that combines formal and out-of-class teaching (Amin, 2020; Kacetl & Klímová, 2019; Son, 2016).

Klímová (2018) reviewed a selection of articles on mobile phones and their apps for teaching English. On the whole, the author states that students perceive in a positive light the use of apps for learning EFL. In addition, Klímová (2018, p. 1097) maintains that students feel more motivated to learn in the formal classroom environment and become more independent outside the classroom when using apps. Similarly, Kacetl and Klímová (2019) reviewed several studies related to using apps for FL teaching. Their research reveals that m-learning, in general, and the use of apps, in particular, is undeniable in today’s education. Likewise, multiple benefits are pointed out, such as increased motivation, student autonomy, and individualized learning.

In a more recent study, Klímová and Poláková (2020) research students’ perceptions when using an app designed specifically for learning English vocabulary and phrases. The study revealed students’ positive perceptions about the app, given its availability anywhere. Besides, the app was helpful for them to prepare for their final exam. As a result, students agreed to implement the app in other courses.

As mentioned above, not only educational apps can be helpful in the English classroom. Gamlo (2019) examined the effect of game-based language learning apps on students’ motivation. The study showed that integrating these apps into

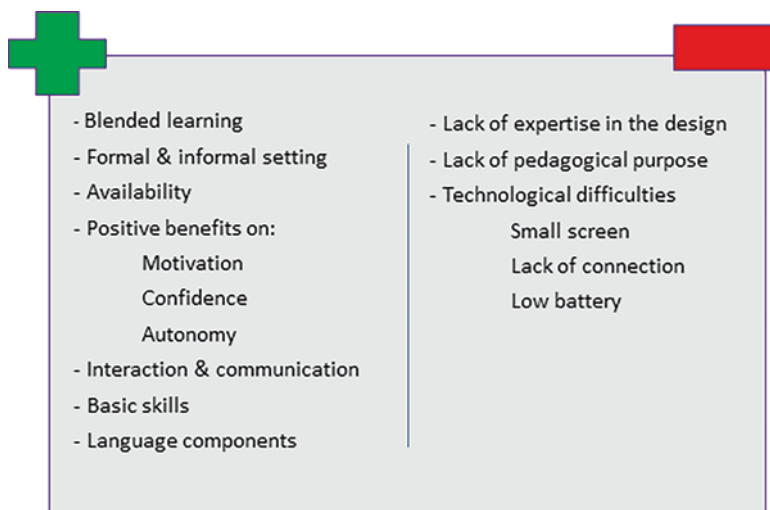
traditional instruction helped increase the students' motivation. However, teachers should choose the apps "according to students' level and needs" to accomplish good learning results (p. 54). Similarly, Amin (2020) reviews the use of Google apps to teach and learn English. The results show that these apps are considered user-friendly and affordable. Moreover, they increase motivation, as they can be used collaboratively and are suitable for student-based learning.

As previously stated, many studies have researched the impact of mobile apps on the teaching-learning process. According to Khaddage et al. (2016), informal learning must be integrated into the twenty-first-century educational system, and mobile apps are suitable for bridging both settings. The availability of the apps allows students to access the learning material at the time they need both inside and outside the classroom (Senior, 2019, p. 140). As a result, students can use them at their own pace, anywhere and anytime. In general, introducing apps in the FL classroom reports a positive attitude, which is advantageous since learners usually increase their motivation (Zou & Li, 2015). Apart from this, Klímová (2020) indicates that mobile apps contribute to improving not only students' cognitive capacity but also their confidence and autonomy. Besides, the author highlights that apps can benefit lower-level students to help them achieve learning objectives. Since using apps can motivate them, they may "spend more time studying outside the classroom" (Kacel & Klímová, 2019, p.4), improving the learners' effort in the achievement of learning goals.

The interactivity of language apps is also presented as a plus since users can discover new content through communication with the app and other users (Khaddage et al., 2016; Klímová, 2018). Likewise, some applications allow users to collaborate and work towards a common goal, which encourages their motivation and reduces their anxiety when learning a language (Amin, 2020). Besides, mobile apps can create a learning community among students, encouraging interaction and communication even outside the classroom (Kusmaryani et al., 2019, p. 2).

Although apps are presented as practical tools to develop the four basic skills, the language component of vocabulary seems to be the most prominent one in the language apps (Klímová & Poláková, 2020). By the same token, Kusmaryani et al. (2019) state that introducing apps in FL learning can improve students' speaking skills and critical thinking since "mobile-assisted learning is connected to constructivist learning" (p. 5). Thus, students create their own knowledge by interacting and experiencing.

Although to a lesser extent, when using apps for teaching EFL, there are also several drawbacks mentioned in the literature. Firstly, it should be considered that many apps are not designed by language experts, which implies certain risks (Kacel & Klímová, 2019, p.6). As a result, teachers should guide their students in using the app for language learning purposes. Secondly, there could be a lack of pedagogical justification for using the apps in the teaching-learning process (Klímová, 2018); therefore, teachers should be cautious because the incorrect incorporation of these new resources may confuse learners regarding the purpose behind their use. To our knowledge, this lack of justification can be one of the major threats when introducing the use of any app in the FL classroom. As Steel (2012, p. 879) advises, students



**Fig. 1** Advantages and disadvantages

need guidance and recommendations to achieve learning benefits and know how to extend them. Thirdly, there can be some technological inconveniences teachers may not be aware of, such as the small screen size of the mobile device (Kaceti & Klímová, 2019). In addition, some technical difficulties can appear as the lack of Internet connection or low battery (Klímová, 2018). Finally, yet importantly, teachers and students should be cautious with the addictive nature of mobile devices and always consider whether there is a clear and relevant educational purpose of introducing apps in the teaching-learning process (Klímová & Poláková, 2020) and whether pedagogical benefits outweigh potential technical difficulties and the risk of overuse.

Figure 1 summarizes the main advantages and disadvantages mentioned above when introducing mobile apps in FL teaching:

### ***2.3 Apps Evaluation Rubrics in Literature***

Although there is a widening corpus of research on app use in the classroom, they tend to focus on technical aspects or their effectiveness for the purpose they address. However, few studies have included in their framework pedagogical issues oriented towards how those apps may tackle the teaching process (however, see Chen, 2016; Eppard et al., 2016; Fernández-Pampillón Cesteros et al., 2013; Martín-Monje et al., 2014; Rosell-Aguilar, 2017). Without underestimating less recent studies, former frameworks have been regarded as less operational for the present chapter, due to the swift technological improvement in the app's functionalities in recent years. Accordingly, the categorizations included for this section fulfill two basic criteria:

they have been developed in the last decade, and they address, visibly or covertly, pedagogical matters focused on how and what type of teaching would be developed when using the app (see Chen, 2016; Eppard et al., 2016; Son, 2016; Martín-Monje et al., 2014; Rodríguez-Arancón et al., 2013; Rosell-Aguilar, 2017).

Rodríguez-Arancón et al. (2013) adapted the taxonomy to evaluate open resources developed by Fernández-Pampillón Cesteros et al. (2013) to be used for educational apps. They incorporated ten categories: pedagogical ones such as *cognitive value and pedagogic coherence*, which refers to “the application’s goals and the specification of its target users and skills developed” (Rodríguez-Arancón et al., 2013, p. 1193); *content quality, capacity to generate learning*, or whether the app achieves the goals proposed; *interactivity and adaptability*, and, finally, *motivation*. Technical categories include *format and layout, usability, accessibility, visibility*, or whether it is organized in modules that may be reused and allow creating new materials, and, finally, *compatibility* for different devices and systems. Although the framework is very detailed and introduces relevant pedagogical issues, it misses out on categories such as *feedback, sharing, or price*, essential for app use in the classroom. Additionally, elements such as motivation, visibility, or capacity to generate learning may present difficulties for being quantified in a checklist.

Martín-Monje et al. (2014, p. 568) also adapted their taxonomy from Fernández-Pampillón Cesteros et al. (2013), focusing on educational and linguistic aspects. This framework is distinguished from similar ones since it incorporates the CEFR dimensions (Council of Europe, 2001). As in other taxonomies, pedagogical and technical issues are taken into consideration. However, *interactivity and adaptability* are considered as technical issues and refer to whether the learner may adapt contents and modify his/her learning, regardless of the teaching methodology used in the app (for a detailed comparison, see Table 1).

In his taxonomy, Son (2016, pp. 167–169) presented fifteen evaluation criteria, implicitly addressing pedagogical and technical aspects of language learning apps. These criteria include *purpose*, or whether the content is in line with its aim, *accuracy*, indicating if the content, language, and cultural elements used are correct; *usefulness; flexibility; authenticity; engagement; feedback; integration*, or whether the content is relevant to the course, *support*; if it provides online help, updates, and assistance, *price, reliability*, or whether it is free of bugs, breaks, and the app remains stable without crashes; *presentation*, so that the user interface is attractive and friendly; and finally, *organization, easiness of navigation and use of multimedia*. Although this author has not considered pedagogical criteria explicitly, he includes some relevant technical elements: *price, support* in the form of instructions, and *reliability*, or whether its use would not be recommended because it is not consistent.

Eppard et al. (2016, p. 22) included six aspects (see the fourth column), also divided into pedagogical and technical issues. In their taxonomy, *relevance* refers to the app focus for the students; *customization* (or flexibility, in other taxonomies) examines whether the app allows altering contents; *engagement* relates to the inclusion of motivating elements, and *sharing* refers to whether the users’ output can be saved and exported for an audience. The taxonomy is pedagogically solid since it

**Table 1** Recent taxonomies evaluating apps for language teaching

	Chen (2016)	Martín-Monje et al. (2014)	Eppard et al. (2016)	Rosell-Aguilar (2017)	Son (2016)	Rodríguez-Arancón et al. (2013)	
Pedagogical criteria		Capacity to generate learning	Thinking skills	Pedagogy		Capacity to generate learning	
			Relevance	Scaffolding			
	Motivation	Motivation	Engagement	Teaching (rather than evaluation)	Usefulness		
	Feedback and self-correction	Engagement	Feedback	Engagement	Purpose		
	Pedagogical coherence on language skills			Progress	Engagement	Motivation	
		Cognitive value and pedagogical coherence		Description	Feedback		
						Cognitive value and pedagogical coherence	
				Differentiation (levels)			
				Use of media			
	Content quality	Content quality		Content quality	Content quality	Accuracy	Content quality
		CEFR descriptors		Skills & components	Authenticity	Integration	
				Cultural information			
		Interactivity and adaptability		Language varieties			Interactivity and adaptability
			Visual content				

Technical criteria	Customization	Visibility Inter-operability Usability Accessibility Interactivity and adaptability	Customization	Technology	Flexibility	Visibility Compatibility Usability Accessibility
Usability	Usability Accessibility	Interactivity and adaptability		Navigation Interface	Navigation Organization	
Sharing	Sharing	Sharing			Multimedia	
	Format and layout			Support	Presentation	Format and layout
				Stability	Support	
				Instructions	Reliability	
				Gamification		
				Offline work		
				Price	Price	
				User experience		
				Interactivity		
				Registration		
				Interaction		
				Advertising		
				Sharing		
				Badging		



includes aspects related to *feedback* and addresses *higher-order thinking* skills such as creating, evaluating, and analyzing. However, it leaves aside other pedagogical issues concerning content or language, and technical ones such as format.

Chen (2016, pp. 41–42) focused on a two-fold framework based, firstly, on language acquisition theories such as social interactionist models (for feedback and self-correction) and Krashen's affective filter hypothesis (to reduce anxiety and increase motivation). Secondly, his framework also addresses the pedagogical dimension, obtaining seven categories (see Table I) also considered in the majority of the checklists reviewed. His explicit focus on language acquisition theories makes this study different and relevant for our purposes.

Rosell-Aguilar (2017) provided a framework consisting of four general areas and a set of criteria within those areas, advancing a very exhaustive checklist. In this paper, these four general areas (*pedagogy*, *subject-specific*, *technology*, and *user experience*) have been grouped into pedagogical criteria (the first two areas), and technical ones (the last two categories) (see Table 1). What makes this framework relevant is the focus on linguistic aspects, including *skills*, *language components* and contents related to *culture*, *visuals* and *language varieties*. Additionally, it deals with methodological issues such as whether the app provides *scaffolding*,<sup>3</sup> namely, if different difficulty levels or previous explanations are provided. The technological dimension is also very comprehensive, enquiring about additional aspects apart from those considered by other checklists, such as whether there is *interaction* (among learners), *interactivity* (with the app), whether the user needs to *register*, or the presence of *advertisements*. Finally, in contrast to other classifications (see Son, 2016), visual content and media use are considered pedagogical elements, referring to its quality rather than how it is integrated or supports contents. Consequently, its comprehensive inclusion of diverse pedagogical aspects makes this checklist one of the most suitable ones to apply to language teaching apps. However, it would require a more detailed description of the categories to be used for evaluation.

Table 1 offers a summary of the aforementioned taxonomies. As shown, when different frameworks evaluate similar aspects, they appear in the same row. Sometimes different wordings have been used to refer to the same issue, so they stand connected. Namely, within pedagogical aspects, see, for example, *relevance*, *teaching*, and *usefulness*, in row three. Something similar happens in row four (*motivation*, *engagement*) or five (*feedback*, *self-correction*, *progress*). For technical criteria, *customization*, *flexibility*, *compatibility*, *interoperability* refer to an analogous notion: whether the app allows changes and adapts to diverse environments. *Navigation*, *usability*, *accessibility*, and *interface* also stand for a similar concept, the level of difficulty involved when interacting with the app. Likewise, *stability* or *reliability* denote a comparable idea, that of how stable the app may be when used.

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<sup>3</sup>This technique, first used by Wood, Bruner and Ross in 1976 (Gibbons, 2013), consists of a special transitory help provided by a teacher, classmate, or, in this case, a computer/mobile phone which enables the learner to achieve a complex task, activity or process he/she would be unable to do alone.

Additional criteria for all the taxonomies are enumerated in Table 1, both including issues unique to a single checklist or elements akin to most rubrics.

A number of prevalent criteria are included in the frameworks considered above. Pedagogical issues such as the capacity to generate learning, relevance, feedback, motivation/engagement, or content quality are considered in several taxonomies. As regards technical aspects, navigation, support, flexibility/customization, price, format and layout, sharing, and stability/reliability are also considered by two or more taxonomies.

As illustrated above, the use of apps has been incorporated in language teaching, creating a need for the evaluation of those resources by means of rubrics. Most of these rubrics have started to include not only technical but also pedagogical aspects, also in response to their use outside and inside the classroom. However, recent frameworks still lack a deeper focus on pedagogical issues related to Teaching English as a Foreign Language (TEFL), particularly for prospective and/or novice teachers, who might be digital natives and used to apps as learners but may still lack specific methodological knowledge on which apps follow an appropriate pedagogical scheme (Council of Europe, 2001; 2020; Bueno & Luque, 2015). Additionally, previous checklists lack a hands-on focus for systematically evaluating concrete apps, detailing options, levels, ratings, and arriving at a detailed tool to be used for deciding which apps should be used in the classroom.

Thus, the following section develops a rubric looking into the aspects mentioned above while at the same time attempting to maintain sufficient clarity and ease of use.

### 3 Checklist Proposal

Since our objective is *to increase prospective and/or novice teachers' awareness of the pedagogical usefulness of language teaching apps for foreign language learning*, a checklist is proposed (see the Appendix for the full version of the checklist). This checklist has been developed and justified following recent literature (Chen, 2016; Eppard et al., 2016; Martín-Monje et al., 2014; Rodríguez-Arancón et al., 2013; Rosell-Aguilar, 2017; Son, 2016) and an expert judgment. In addition, as in Rosell-Aguilar's work (2017), an earlier version of the checklist was tested in the last teaching semester of 2020 with a group of 45 students (prospective teachers) specializing in TEFL.<sup>4</sup> Although numerous rubrics for evaluating educational apps have been developed in the last decade (see references above), several reasons make the checklist presented in this chapter relevant for the educational context. First, it contemplates an extensive scope of criteria, including, as previous tools, both

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<sup>4</sup>Some of the apps selected by prospective teachers to be evaluated with the checklist were: *ElsaSpeak*, *Ted*, *Spell Up*, *Ankidroid*, *Discord*, *Talk with Andy*, *New York Times app*, *Word of the day*, *English for Everyone*, *Wordbit*, *Nearpod*, *Duolingo*, *Grammarly*, *Speeko*, *Word Up*, *Voscreen*, *Falow*, *Forbo*, *Busy Teacher*, and *Superproof*. These apps were chosen either because they had been previously used, or because they were "popular for English learning", in the users' words.

technical and also pedagogical specifications. However, in this checklist, the second group of specifications has been further developed, incorporating a more detailed array of pedagogical aspects which had not been previously considered in-depth (Council of Europe, 2020). Thus, the checklist updates technical issues to adjust to the swift technological development of apps in recent years and establishes a more detailed analysis and evaluation of pedagogical aspects (see Sections III and IV of the checklist). Besides, it enables teachers to develop a more comprehensive view of a specific app and its use in the classroom. Accordingly, the checklist is organized into six sections, including *technical specifications* (Section I), *requirements* (Section II), *general teaching information* (Section III), *specific methodological information* (Section IV), *advantages and disadvantages* (Section V), and *how it works* (Section VI).

Section I (see Table 2) refers to the practical aspects of the app. It has been included in view of what is reported in the literature, specifically, the fact that many apps present a variety of technical problems when they are downloaded or used. Consequently, in order to find out some of these technical aspects that can undermine its use, we included in our checklist several items, such as the *type of app* selected, its *category*, *data plan required*, *price*, the quality of *multimedia* incorporated, *interface design* or the presence of *software errors*. Namely, establishing the type of app (described in Sect. 2.1.) and its function—educational, lifestyle, social media, productivity, entertainment, and game—(Poetker, 2019) will help educators make pedagogical decisions based on these criteria. The next component requires searching for other user's ratings of the app and giving a personal rating (other users' ratings and overall personal rating). External Ratings are useful in the sense they may inform prospective users, in this case teachers, helping them discard those apps with low ratings. However, they are only valid as alternative opinions, as this type of assessment should then be compared with the users' personal evaluation of the app. The fifth component considered within this section refers to the *mobile data plan* required, which depends on the type of app and whether it requires an Internet connection to be used (see Sect. 1). *Price* constitutes an additional component, including five options: whether the app is completely *free*; if it allows a *free trial* for a certain period of time but with restrictions on its use; *affordable price* when it can be downloaded for a small amount; *expensive*, typically those mobile versions of traditional dictionaries, textbooks or grammar tests, and, finally, *maintenance fees*, if it requires regular payment (also see Rosell-Aguilar, 2017; Son, 2016). The next two sections involve evaluating additional aspects of the app, such as the *use of multimedia*, including graphics, sound and color, and *user-interface design*, which concerns aspects such as the format, appearance, or whether it is user-friendly. Finally, three more elements are considered: if *instructions* about its use are provided and whether *advertising* or *software errors* have been ascertained. Each of these last three aspects requires a yes/no answer.

Section II (see Table 3) contemplates the level of technological knowledge required when using the app from a two-fold perspective. The user's role (teacher vs learner) has been considered, given the breach between digital natives—most learners—and those who are not—many senior teachers—. In addition, it contemplates

**Table 2** Technical specifications

Name of app. Web site/server					
SECTION I. TECHNICAL SPECIFICATIONS					
Type of app					
	Native app				
	Web app				
	Hybrid app				
Category					
	Educational				
	Game				
	Lifestyle				
	Social media				
	Entertainment				
	Productivity				
Other users' rating <sup>1</sup>					
	1	2	3	4	5
Overall personal rating					
	1	2	3	4	5
Mobile data plan required					
	Basic				
	Average				
	Unlimited data				
Price					
	Free version				
	Free trial				
	Affordable				
	Expensive				
	Maintenance fees				
Use of multimedia (graphics, sound and colour)					
	Yes				
	No				
Multimedia Quality. Rate					
	1	2	3	4	5
User-interface design					
	1	2	3	4	5
Instructions					
	Yes				
	No				
Advertising					
	Yes				
	No				
Software errors					
	Yes				
	No				

<sup>1</sup>1 – very low, 2 – low, 3 – average, 4 – high, 5 – very high

**Table 3** Requirements/conditions

SECTION II. REQUIREMENTS/CONDITIONS		
Level of technological knowledge required as a teacher		
	Low	
	Medium	
	High	
Level of technological knowledge required as a learner		
	Low	
	Medium	
	High	
On which electronic device(s) can the app run?(and the one recommended?)		
	Actual	Recommended
	Computer	
	Tablet	
	Smartphone	
	Other	
Webcam required?		
	Yes	
	No	

the possibility of determining which electronic device is the most suitable for the correct operation of the application. As mentioned above, knowing the type of app can be helpful to decide what device the students would need for running the app. Finally, it also considers whether a webcam is required for its use.

Section III (see Table 4) is explicitly oriented to its pedagogical use, concerning global aspects regarding the mode of instruction allowed by the app design. First, there is a general question on whether the app can be employed for *learning*, *teaching*, *testing*, or more than one option (also see Rosell-Aguilar, 2017). Then, the checklist considers the type of instruction allowed, *synchronous*, *asynchronous*, or *both*. The next aspect, *customization*, refers to whether the app offers the possibility of being modified to meet the teacher's or the students' needs, specifically regarding contents or design of activities. A further item, *collaborative*, entails having connectivity with other users to work together. Finally, *sharing* considers whether the content can be shared, downloaded, and/or revised by the teacher or an audience (Eppard et al., 2016).

Section IV (see Table 5) involves *specific methodological information*. It deals with the more concrete pedagogical aspects of the checklist when deciding whether to implement its use in the classroom, whether it fits the teacher and the syllabus needs, and, on grounds of the information considered, *how* and *when* it may be used. The different categories developed in the three main areas of this section are based on current pedagogical trends for L2 teaching. They reflect how skills and components should be developed (Council of Europe, 2020) and whether different cognitive processes (Krathwohl, 2002), activity formats (Bueno & Luque, 2015), and feedback have been incorporated in the app design.

**Table 4** General teaching information

SECTION III. GENERAL TEACHING INFORMATION		
Can it be used for ...		
	Testing	
	Learning	
	Teaching	
Type of instruction		
	Synchronous	
	Asynchronous	
	Synchronous & Asynchronous	
Can it be customised?		
	Yes	Content
		Design of activities
	No	
Collaborative		
	Yes	
	No	
Sharing		
	Yes	Synchronously
		Asynchronously
	No	

First, several practical issues are included, such as the *topic* of the app, the expected *length* of the exercises provided, or the *classroom stage* where it can be used. The second area (adapted from Luque-Agulló, 2022) examines basic skills —*listening, speaking, reading, and writing*— and linguistic components —*grammar, vocabulary, and pronunciation*— and it also includes how they are developed. As more than one skill or component may be implemented simultaneously, the checklist provides a non-exclusive multiple option set of answers. Regarding their design, several aspects have been taken into account. Firstly, its *language objective* provides two excluding options, *accuracy* or *fluency*; that is to say, whether there is a focus on providing correct answers or the focus is placed on meaning and not on precision. Then, regarding written production, the checklist also scrutinizes whether this production focuses on *controlled* writing, involving formal and mechanical aspects such as spelling, punctuation, and the like; *guided* writing, in which learners are provided with specific instructions, input and language to be used, and *free* writing, in which some help and strategies may still be provided but where the writing task is more extended and focused on content/meaning. Thirdly, if the app includes the pronunciation component, activities might be *receptive*, involving the recognition of aural elements, and/or *productive*, practicing the production of specific isolated or connected linguistic elements. Finally, the *learning path* deals mainly with the grammar component, and it refers to whether rules are provided and then practiced —*deductive*—, or, alternatively, whether there is some practice so that rules have to be inferred or are to be found elsewhere —*inductive*—.

**Table 5** Specific methodological information

<b>SECTION IV. SPECIFIC METHODOLOGICAL INFORMATION (TEACHING POINT OF VIEW)</b>	
Specific content/topic developed (i.e. language, culture...)	
Length/realisation time	
If it allows synchronous instruction, when can it be used?	
	Warm-up
	Ice-breaker
	Wrap-up
	Core
	Other
Skills & linguistic components practised (primary and secondary)	
	Listening
	Speaking
	Reading
	Writing
	Grammar
	Vocabulary
	Pronunciation
Language objective	
	Fluency
	Accuracy
Type of writing	
	Controlled
	Guided
	Free
Pronunciation	
	Receptive
	Productive
Grammar	
	Inductive
	Deductive
Cognitive processes	
Remember	Recognise
	Recall
Understand	Give examples
	Classify
	Summarise
	Make inferences
	Compare
	Explain/give reasons
Apply	Implement
	Perform/enact

(continued)



**Table 5** (continued)

Analyse	Differentiate				
	Organise/classify				
	Assign				
Evaluate	Revise				
	Criticise				
Create	Plan				
	Produce				
Activity/task format					
	Same format				
	Information gap	With options			
		Without options			
	Matching				
	Ordering				
	True/false				
	Multiple choice				
	Finding mistakes or differences				
	Rewriting				
	Short answer				
	Long answer				
	Feedback				
		Yes	Provides explanation		
		No explanation			
No					
Rate feedback usefulness	1	2	3	4	5

The third area involves *cognitive processes*, *activity format*, and *feedback*. Cognitive processes follow Bloom's taxonomy (1956), updated by Krathwohl (2002), and they involve six categories: from the lower-order processes such as *remember*, *understand* or *apply* to the higher-order ones such as *analyze*, *evaluate* and *create*; in turn, these six categories have been subdivided into more specific cognitive operations. For instance, lower-order processes such as *remember* have been further divided into two categories: *recognize* and *recall*. Higher-order processes such as *evaluation* involve *revising* and *criticizing*. These categories are crucial because they examine what the student has to do when completing a task within the app. Moreover, higher-order processes are rarely considered in any pedagogical analysis of the activities found in apps or other educational materials. They usually include only mechanical ones such as comprehension, recall, and memorization (as an exception, see Eppard et al., 2016). However, following education guidelines (Council of Europe, 2020) and twenty-first century skills (Digital Education Action Plan, 2020), learners must develop both types of processes and, accordingly, teachers should include both in their classroom practice. The following section is also

**Table 6** Advantages and disadvantages/drawbacks

SECTION V. ADVANTAGES & DISADVANTAGES/DRAWBACKS	
Positive aspects	Negative aspects

**Table 7** How does it work? Illustrate

VI. HOW DOES IT WORK? ILLUSTRATE

related to the design of activities and tasks, considering, this time from a simpler perspective, whether the *format* of these exercises is varied or not and, when there is variation, which activity formats are exploited, namely, *information gap, multiple-choice, long and short answers, finding mistakes, matching, classifying*, etc. (also see Bueno & Luque, 2015). Finally, the last category considers whether the *feedback* is developed and how this process is accomplished. Namely, some apps just say whether an answer is incorrect or correct, making the feedback function very limited (Kacatl & Klímová, 2019). In contrast, other apps may integrate users' incorrect answers to provide further explanations or additional exercises. Given the importance of providing appropriate feedback for pedagogical purposes, the next item asks teachers to rate feedback usefulness from 1 to 5.

Section V (see Table 6) offers the possibility of providing more extended and open-ended answers, in the sense they allow the app user, namely, the teacher, to enumerate positive aspects and setbacks.

Finally, section VI (see Table 7) also requires a more extensive answer, allowing the user to explain how the app operates. For instance, the user may comment on the different options provided by the app, the steps to be followed, or how to navigate through the different levels or steps offered by the app.

The teacher should complete all these sections, circling one or more options, depending on whether they are inclusive or exclusive, and providing additional information (see Sections V and VI). In this way, s/he may arrive at a more comprehensive view of the checklist being evaluated, the technical requirements needed for its use in or outside the classroom, and the pedagogical aspects implicit in the app design, which may inform him/her on aspects related to its implementation, namely,

if it should be used, when, how, at what stage in the teaching process, which components would be developed, or which cognitive processes might be achieved by means of the app.

## 4 Conclusions

Mobile apps can provide numerous benefits to students as they can be used as a learning tool both outside and inside the FL classroom. However, the rapid and constant appearance of new apps on the market can imply a challenge for novice or prospective FL teachers since deciding which mobile app is technically feasible and, more importantly, pedagogically relevant for their classes can be a difficult task.

Hence, it would be convenient for teachers to have a tool that will help them determine which mobile app follows pedagogically relevant criteria while fulfilling their educational goals for a particular classroom context. For that reason, this paper aims to provide an easy-to-use checklist that helps (prospective) teachers select a specific app for their classes. As explained above, there are not many research studies that focus on easily applicable criteria for the selection and evaluation of apps for teaching. Thus, the checklist presented in this chapter has been developed and justified following recent literature (Chen, 2016; Eppard et al., 2016; Fernández-Pampillón Cesteros et al., 2013; Martín-Monje et al., 2014; Rosell-Aguilar, 2017), an experts' judgement and the evaluation of a preliminary version by a group of 45 prospective teachers specializing for TEFL in the last teaching semester of 2020 at the University of Jaén, in Spain. Given the lockdown situation, the use and evaluation of the checklist for the different apps selected by the students was virtual, and participants evaluated its usefulness, clarity, and other issues by means of a questionnaire created with Google Forms, which was taken into consideration to refine the checklist. They also provided oral feedback by means of short online presentations carried out through Google Meet.

It goes without saying that more research is needed to refine the checklist. First, its use should be piloted by having several groups of (prospective) teachers apply the checklist on the same apps. A second step would involve fine-tuning the comprehensibility and effectiveness of the checklist based on the conclusions of those (prospective) teachers but keeping in mind other studies and an experts' judgement. This, in turn, may improve the design of effective EFL apps in terms of pedagogical, linguistic, and technical criteria, and as a consequence, enable (prospective) teachers to make sound pedagogical choices for their use inside and outside the classroom. Finally, although the checklist developed in this chapter is addressed to (prospective) teachers of English as a Foreign Language, following recent specialized literature, a revised version might potentially be used for evaluating apps intended for additional foreign languages.

## Appendix

Name of app. Web site/server					
SECTION I. TECHNICAL SPECIFICATIONS					
Type of app					
	Native app				
	Web app				
	Hybrid app				
Category					
	Educational				
	Game				
	Lifestyle				
	Social media				
	Entertainment				
	Productivity				
Other users' rating <sup>2</sup>					
	1	2	3	4	5
Overall personal rating					
	1	2	3	4	5
Mobile data plan required					
	Basic				
	Average				
	Unlimited data				
Price					
	Free version				
	Free trial				
	Affordable				
	Expensive				
	Maintenance fees				
Use of multimedia (graphics, sound and colour)					
	Yes				
	No				
Multimedia Quality. Rate					
	1	2	3	4	5
User-interface design					
	1	2	3	4	5
Instructions					
	Yes				
	No				
Advertising					
	Yes				
	No				
Software errors					
	Yes				
	No				

<sup>2</sup>1 – very low, 2 – low, 3 – average, 4 – high, 5 – very high

<b>SECTION II. REQUIREMENTS/CONDITIONS</b>		
Level of technological knowledge required as a teacher		
	Low	
	Medium	
	High	
Level of technological knowledge required as a learner		
	Low	
	Medium	
	High	
On which electronic device can the app run?(and the one recommended?)		
	Actual	Recommended
	Computer	
	Tablet	
	Smartphone	
	Other	
Webcam required?		
	Yes	
	No	

<b>SECTION III. GENERAL TEACHING INFORMATION</b>		
Can it be used for ...		
	Testing	
	Learning	
	Teaching	
Type of instruction		
	Synchronous	
	Asynchronous	
	Synchronous & Asynchronous	
Can it be customised?		
	Yes	Contents
	No	Design of activities
Collaborative		
	Yes	
	No	
Sharing		
	Yes	Synchronously
		Asynchronously
	No	

<b>SECTION IV. SPECIFIC METHODOLOGICAL INFORMATION (TEACHING POINT OF VIEW)</b>	
Specific content/topic developed (i.e. language, culture...)	
Length/realisation time	
If it allows synchronous instruction, when can it be used?	
	Warm-up
	Ice-breaker
	Wrap-up
	Core
	Other
Skills & linguistic components practised (primary and secondary)	
	Listening
	Speaking
	Reading
	Writing
	Grammar
	Vocabulary
	Pronunciation
Language objective	
	Fluency
	Accuracy
Type of writing	
	Controlled
	Guided
	Free

(continued)

Pronunciation						
	Receptive					
	Productive					
Grammar						
	Inductive					
	Deductive					
Cognitive processes						
Remember	Recognise					
	Recall					
Understand	Give examples					
	Classify					
	Summarise					
	Make inferences					
	Compare					
	Explain/give reasons					
Apply	Implement					
	Perform/enact					
Analyse	Differentiate					
	Organise/classify					
	Assign					
Evaluate	Revise					
	Criticise					
Create	Plan					
	Produce					
Activity/task format						
	Same format					
	Information gap	With options				
		Without options				
	Matching					
	Ordering					
	True/false					
	Multiple choice					
	Finding mistakes or differences					
	Rewriting					
	Short answer					
	Long answer					
	Feedback					
	Yes	Provides explanation				
		No explanation				
	No					
Rate feedback usefulness		1	2	3	4	5



SECTION V. ADVANTAGES & DISADVANTAGES/DRAWBACKS <sup>3</sup>	
Positive aspects	Negative aspects

VI. HOW DOES IT WORK? ILLUSTRATE

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