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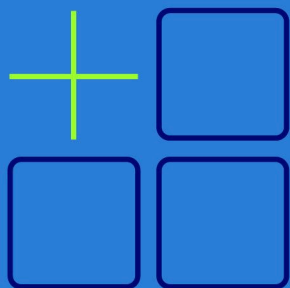
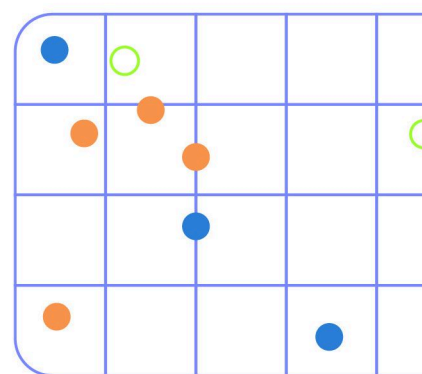
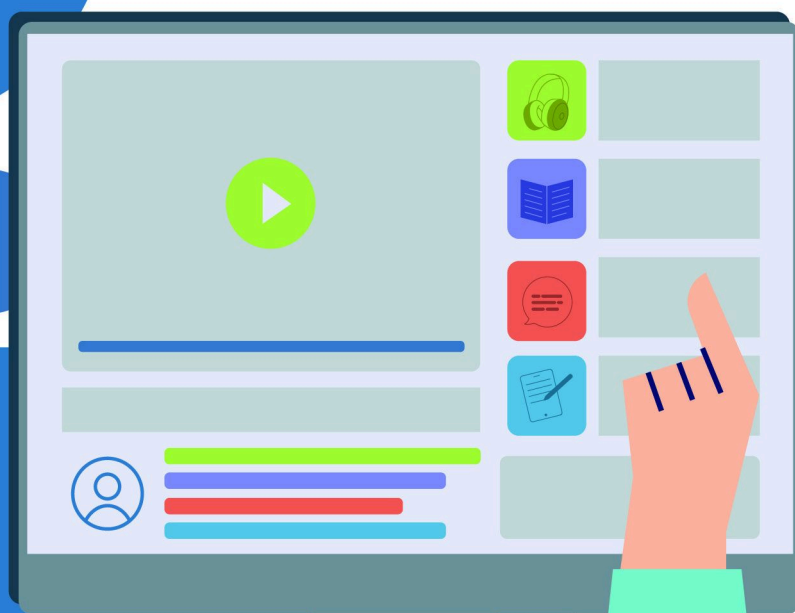


Universidad Autónoma del Estado de Hidalgo



Universidad Veracruzana

USING TECHNOLOGY FOR TEACHING AND LEARNING ENGLISH



AUTHORS

Daniel Tehozol Jesús Fernando
Guarneros Rentería Rogelio
López González Laura
López Rodríguez Jeniffer Monserrat
Martínez Cortés Jorge

Martínez Karla Lizeth
Mata Vicencio Tito Antonio
Rodríguez Luna Verónica
Sánchez Cruz Elida
Sánchez Huerta Antonio Iván
Santos Hernández Abiel Gerardo

EDITORS

Guevara Bazán Isaí Alí
Crawford Jennifer Ann
Amador Pliego Edward

AUTHORS AND EDITORS

(Editor and coordinator of the book)

Isaí Alí Guevara Bazán

Facultad de Idiomas-UV
Xalapa Equez. Veracruz. México
iguevara@uv.mx
<https://orcid.org/0000-0002-1500-291X>

(Editor) Edward Amador Pliego
Universidad Autónoma del Estado de Hidalgo

Pachuca de Soto. Hidalgo. México
<https://orcid.org/0000-0002-4932-9574>

(Author) Karla Lizeth Mata Martínez

Centro de Idiomas Poza Rica UV
Poza Rica. Veracruz. México
kmata@uv.mx
<https://orcid.org/0000-0003-1354-3250>

(Author) Elida Sánchez Cruz

Facultad de Idioma UVs
Xalapa Equez. Veracruz. México
elisanchez@uv.mx
<https://orcid.org/0000-0002-3092-543X>

(Author) Antonio Ivan Sánchez Huerta

Centro de Idiomas – Orizaba UV
Xalapa Equez. Veracruz. México
antonsanchez@uv.mx
<https://orcid.org/0009-0006-6556-1628>

(Author) Tito Antonio Mata Vicencio

Centro de Idiomas – Orizaba UV
Orizaba, Veracruz. México
tmata@uv.mx
<https://orcid.org/0009-0002-6370-3646>

(Editor) Jennifer Ann Crawford

University of Southern California
Los Ángeles, California. Estados Unidos
<https://orcid.org/0000-0002-6824-5579>

(Author) Abiel Gerardo Santos Hernández

Dirección del Área de Formación Básica UV
Xalapa Equez. Veracruz. México
absantos@uv.mx
<https://orcid.org/0000-0002-4727-8312>

(Author) Verónica Rodríguez Luna

Centro de Idiomas – Xalapa UV
Xalapa Equez. Veracruz. México
verorodriguez@uv.mx
<https://orcid.org/0000-0003-2599-3697>

(Author) Jennifer Monserrat López Rodríguez

Centro de Idiomas – Xalapa UV
Dirección de Relaciones Internacionales
Xalapa Equez. Veracruz. México
jennlopez@uv.mx

(Author) Jorge Martínez Cortés

Facultad de Idiomas UV
Xalapa Equez. Veracruz. México
jomartinez@uv.mx
<https://orcid.org/0000-0002-8696-2088>

(Author) Rogelio Guarneros Rentería

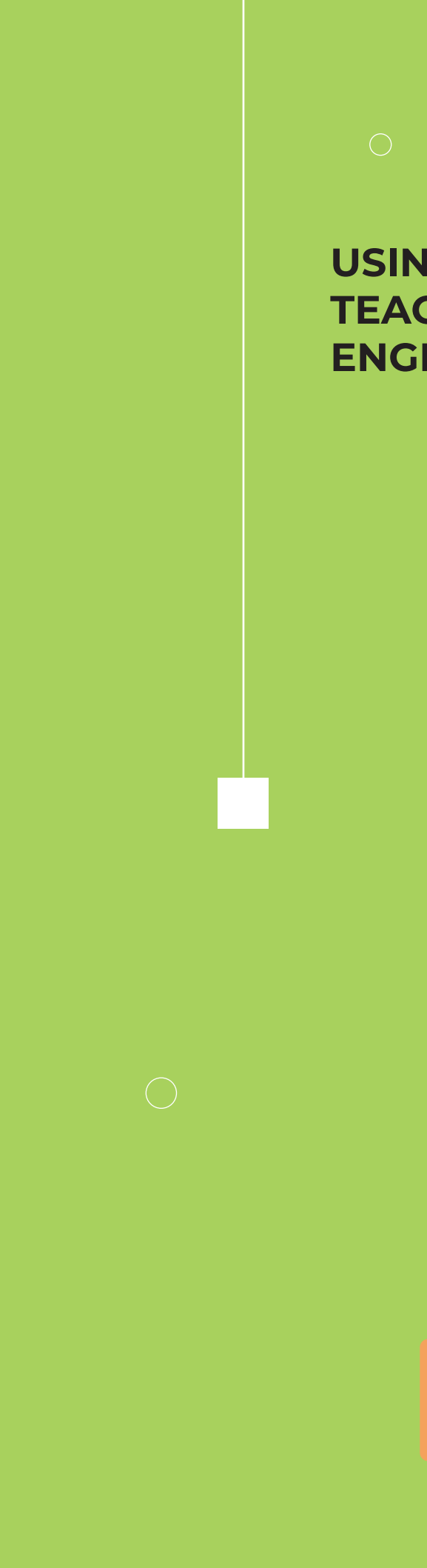
Centro de Idiomas – Xalapa UV
Xalapa Equez. Veracruz. México
roguarneros@uv.mx

(Author) Laura López González

Centro de Lenguas de la UAEH
Pachuca de Soto, México
laura_lopez7883@uaeh.edu.mx
<https://orcid.org/0000-0003-3053-7004>

(Author) Jesús Fernando Daniel Tehozol

Pachuca de Soto, Hidalgo. México
jesus_daniel@uaeh.edu.mx
<https://orcid.org/0000-0002-3189-2473>



USING TECHNOLOGY FOR TEACHING AND LEARNING ENGLISH

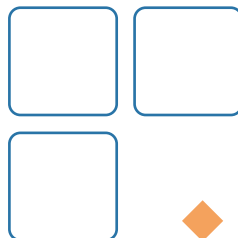
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Este libro es resultado de actividades relacionadas con investigación, tecnología y educación; un aporte innovador al desarrollo de la ciencia en México y en el mundo.

“Los capítulos de este libro fueron sometidos a un proceso de arbitraje académico bajo la modalidad de revisión a doble ciego, garantizando la confidencialidad de autores y revisores, así como la calidad y rigor científico de los contenidos.”



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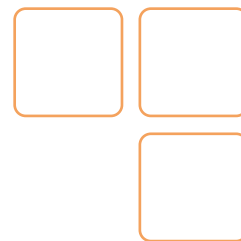
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Introduction



Using Technology for Teaching and Learning English

We write to you as teachers alongside you—as colleagues who have planned in cramped offices, negotiated with slow Wi-Fi, and borrowed a projector from the history department because ours “walked.” We also write as co-editors who have spent the last few years listening to your classes (sometimes literally, over WhatsApp voice notes) across Mexico and the Americas. Our shared premise is simple enough: pedagogy guides tools, not the other way around. Or, as we’ve said elsewhere, pedagogy is the science and art of teaching... how we teach and why we teach that way.

We know the standard storyline about technology in English teaching: devices motivate students, platforms scale feedback, and AI writes a tidy rubric. We’re not fully convinced. Yes, technology can “democratize access to quality English resources” and expand culturally responsive materials, but only when you all steer it with intention, equity, and local wisdom.

We’ve also seen the opposite: imported apps that flatten students’ voices, shiny dashboards that grade accents, and curricular add-ons that treat Spanish, Mixe, K’iche’, or Portuguese as obstacles rather than assets. They say the tool is neutral; we say the tool is always situated—inside institutions, markets, and language ideologies that we can (and should) name.

What this book is—and is not

This book is a practical, justice-oriented guide for using technology to teach English across diverse contexts—from public secondary schools in Yucatán to adult programs in Chicago, from rural telesecundarias to private universities. We center your everyday constraints and your ingenuity. We also take a clear stance: English teaching sits inside histories of racialization, standard language ideology, and market logics. If we ignore that, our “tech integration” risks polishing the same inequities students already navigate. The problem is not new; the “persistent sociopolitical, raciolinguistic, and educational inequities” that shape ELT in the 21st century are the ones we inherited from the 19th and 20th.

So what is this book not? It’s not a catalog of apps. It’s not a promise that one platform will “fix” participation or pronunciation. And it’s not naïve about institutional contradictions. We take seriously the work many of you are already doing: resisting mono-

lingual policies in quiet ways, “disguising” inclusive materials when needed, and shifting evaluation toward intelligibility and substance over accent.

Our anchor: pedagogy first, technology second

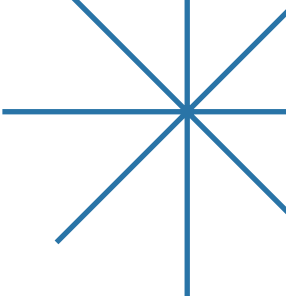
We organize the book around three orientations you will recognize in your own practice: traditional (teacher-centered), progressive (student-centered), and critical (justice-centered). None is sufficient alone; each can be appropriate at times. What matters is matching approach to purpose and context—and doing so with ideological clarity. In our earlier work, we’ve argued that no single method is universally superior and that you should “tailor [your] strategies to the unique needs of learners within diverse educational and community settings.”

Traditional moves (explicit modeling, form-focused practice) have their place—especially when students ask for them before high-stakes interviews or standardized exams.

Progressive moves (projects, inquiry, collaboration) fit when you need curiosity and choice to drive persistence.

Critical moves (interrogating power, centering community knowledges) are essential when texts and tests smuggle in deficit narratives or when “native-speakerism” creeps into feedback. Critical approaches foreground power and access; they “challenge... standard language varieties,” push beyond mere acquisition, and aim at empowerment.

Throughout, we keep language form visible and social. Equitable ESOL teaching, we’ve written, embeds form “systematically in meaningful... content... in real-world social, cultural, and political contexts,” developing metalinguistic strategies so students can read and rewrite the world—not just the sentence.



Our commitments (and how they shape technology)

Three commitments run through the book and inform every tool choice:

1. **Multilingual justice.** Students have the right to learn without discrimination, using their full repertoire. Your classrooms already show this—“Spanglish to process content, then formalize it for class,” a quick “bienvenidas” that signals dignity, or translanguaging to draft ideas before tightening register.

We treat Spanish, Indigenous languages, and English as resources for thinking, not as separate silos to police.

2. **Ideological clarity.** Institutions need it; so do we. Clarity helps you notice when a speech-recognition feature rewards whitened accents or when a “global English” corpus erases Caribbean or Mexican varieties. It also helps programs audit materials and assessments for raciolinguistic bias.

3. **Teacher agency and praxis.** Faculty advocacy is a “central mechanism of resistance,” and we write to expand your room to maneuver—whether through formal redesign or small acts in the margins.

From these commitments, our tech stance follows. We prefer tools that (a) make multilingual participation easier, (b) surface—not hide—language ideology, and (c) hand you formative data you can actually use.

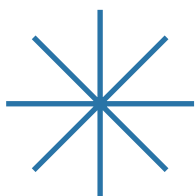
What you’ll find in these chapters (and why it matters)

You asked us for a book that balances theory, concrete guidance, and ethics. Each chapter responds with two promises: a stance and a set of moves you can try next week.

- **Writing with and against templates (Ch. 1–2).** You’ll see genre-based writing with word-processor templates for résumés, reports, and fliers; collaborative drafting in Docs and wikis; and small “public writing” through class blogs or forums. The point is not the platform; it’s how you all use it to scaffold audience, purpose, and voice—especially for students writing across languages.



- **Speaking and listening beyond accent policing (Ch. 3).** We show ways to use mobile audio, low-bandwidth voice notes, and community interviews to prioritize intelligibility, interaction, and dignity. Several activities explicitly push back on accent-as-competence—an assumption your students have told us is both common and harmful.
- **Reading, vocabulary, and critical language awareness (Ch. 4).** Technology should make texts more *legible*—linguistically and ideologically. We include a “critical dictionary” template and word/grammar maps that invite students to track meaning, usage, and power (e.g., who a term uplifts, who it marginalizes) across languages and contexts.
- **Assessment that doesn’t shrink learning (Ch. 5).** You’ll get checklists for writing clear learning objectives and examples of tech-supported performance assessments that value collaboration and translanguageing. We also provide planning templates to keep the loop tight: plan, teach, observe, reflect, and adjust.
- **Policy, standards, and justice (Ch. 6).** Chapters translate TESOL, CEFR, and social-justice frameworks into classroom moves—e.g., projects that enact democratic citizenship or school-wide policies that honor nondominant varieties.
- **AI, ethics, and equity (Ch. 7).** We approach AI with caution and curiosity. You’ll see activities that treat generative models as fallible collaborators, not authorities, and practical checks to keep human judgment—yours and your students’—in the loop. When in doubt, we default to transparency, consent, and data minimization.
- **Sustaining the work (Ch. 8).** We close with institutional and policy levers: equity labs, multilingual hiring, and accreditation practices that actually measure anti-racist, anti-colonial preparation—because changes in micro-moves flourish when macro-structures shift.



How we hope you will use this book

We hope you'll read selectively and try small things quickly. You might start tomorrow by swapping a pronunciation quiz for a community voice-note exchange, or by turning a grammar mini-lesson into a bilingual “critical dictionary” entry students co-author on their phones.

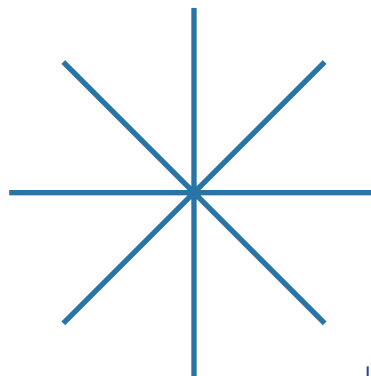
You may pilot a low-bandwidth wiki for collaborative summaries in a rural class or curate genre exemplars in Word before moving to public-facing blogs.

At the unit level, our planning tools can help you write tighter objectives, align tasks, and document what actually changed for students. Then, use your reflections to press outward—into your department meetings, syllabi reviews, and accreditation cycles—so classroom shifts accumulate into program change.

A final invitation

We'll be frank: some of what follows will feel like permission slips for what you already do; other parts may stretch you, and a few will likely spark disagreement. That's healthy. We expect pushback on where we draw the line between scaffolding and surveillance, on how we weigh intelligibility versus target-like forms, and on when to say no to a tool that “works” but narrows students' identities. We're of two minds in places, too. We may concede that an app speeds feedback, while insisting that your judgment—your sense of the learners in front of you—matters more. (If you hear our hedging, you're hearing us think with you.)

Our hope is that you'll read this book in community—with a colleague down the hall or with teacher-researchers across borders—and treat it as an invitation to keep reworking your practice toward multilingual justice. Technology will not save our classrooms. You will. And with clear pedagogy, a critical lens, and the tools that fit your context, you are likely to find that the small, steady moves you make each week add up to a different kind of English class—one where students learn to listen for power, to write for real audiences, and to claim their full linguistic selves.



CHAPTER



Digital resources to improve listening skills

Karla Lizeth Mata Martínez

Abstract

Teaching a second language is challenging; numerous aspects must be considered to develop the four fundamental language skills: listening, reading, writing, and speaking. It would be nearly impossible to claim that one ability is more important than the others. However, receptive skills (listening and reading) play a crucial role in acquiring a second language; language learners receive the necessary input to develop productive skills through these abilities. In this chapter, the primary focus will be on language learning approaches, digital resources, digital competencies, strategies that can help second language learners improve their listening skills, and the challenges they encounter in achieving these objectives.

Introduction

According to Hammer (2001), listening is the ability to receive and interpret messages accurately in the communication process. Atas-heneh & Izadi (2012) define listening as “a person’s ability to listen and understand spoken language is critical to oral communication in any language”. According to Buck (2001), listening differs in meaning from sound discrimination to aural comprehension. After analyzing the former definition, it is essential to note the distinction between listening and listening comprehension. According to Brown and Yule (1983), listening comprehension refers to a person’s ability to understand what they have heard.

Review of literature

Dirven and Oakeshott-Taylor (1984) claimed that listening comprehension is the product of teaching methodology and is matched by terms such as speech understanding, spoken language understanding, speech recognition, and speech perception. Rost (2002) and Hamouda (2013) defined listening comprehension as an interactive process in which listeners construct meaning. Listeners comprehend the oral input through sound discrimination, previous knowledge, grammatical structures, stress and intonation, and other linguistic or non-linguistic clues. According to Blaine Goss (2009), listening comprehension is the process of understanding and making sense of spoken language. These involve knowing speech sounds, comprehending the meaning of individual words, and understanding the syntax of sentences.

Listening is crucial to all effective communication. Without the ability to listen effectively, messages could be easily misunderstood. Listening enables the understanding of facts and ideas. Therefore, it can be summarized as the act of listening attentively. However, listening is not simply hearing; it is the brain's absorption of the meanings of words and sentences. It is sometimes considered the most significant input resource for language learners (Hamouda, 2013).

Listening is the first of the four language skills; it is the first essential language skill because learning a language begins when we learn to listen, speak, read, and write. As it is the first language skill, it is perhaps the most important skill of all as it is the basis for the other three skills: Speaking, Reading, and Writing.

Listening skills

Listening skills are fundamental in the workplace, the family, and society. Moreover, effective listening skills are essential for enhancing communication, interpersonal relationships, emotional intelligence, and self-awareness.

There is a difference between simply listening and listening with focused attention. English listening skills require concentration. When we listen, we obtain information from different sources. Therefore, it could be said that the ability to understand a language has an instrumental purpose. Developing this ability when learning a second language is essential for understanding the target language.

There are several ways to develop listening comprehension while learning a second language; some of these are related to the use of audiovisual media, such as recorders, computers, listening devices, and televisions, among others. These media are intended for the student to listen to conversations in the target language, songs, movies, and videos. Though we are involved in these different types of listening, we do not categorize them all the time. However, knowing about these types of listening is important to enhance students' comprehension of the target language.

According to Harmer (2002), There are two main types of listening: extensive and intensive. Extensive listening usually occurs outside of the classroom, whereas intensive listening occurs in the classroom through specific materials and activities. Teachers can encourage learners to use all the digital resources available to develop their listening skills outside the language classroom (extensive listening), which can help students become more independent learners. On the other hand, intensive listening demands that teachers prepare materials and activities in advance, and the necessary resources or technology to reach their learning goals. Intensive listening focuses on a particular aspect of detail.

The purpose of listening closely to detail is to learn to listen and accurately decode specific information so that meaning-making becomes automatic. As such, the specific detail to be focused on depends on the learners' interests and needs. Intensive listening tasks daily include dictation, shadowing, catching specific information, word-spotting, error-spotting, grammar processing, and simultaneous translation (Rost, 2011).

Listening skills are essential in second language learning as they are crucial in communication and comprehension. However, many language learners struggle with listening due to various factors, including unfamiliar accents, fast-paced speech, and limited exposure to authentic language use. To address these challenges, educators have developed various approaches to enhance the listening skills of second language learners. Some of these approaches include classroom-based, technology-based, and real-world approaches. Each approach offers unique strategies and techniques to help learners improve their listening abilities.

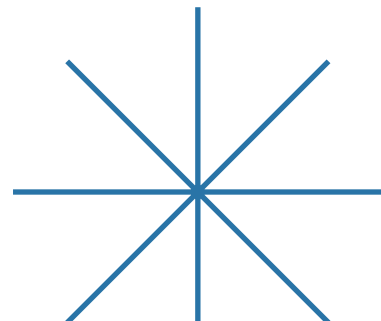
Classroom-based approaches

Classroom-based approaches to developing listening skills have long been employed in language classrooms. These approaches focus on structured listening activities that target specific language features and comprehension strategies. For example, teachers may design activities that require learners to identify specific vocabulary or grammatical structures in a listening passage.

Providing learners with clear objectives and tasks helps develop their ability to identify and understand key language elements. In addition to structured activities, utilizing authentic listening materials is another effective strategy in the classroom. Various activities can be performed using authentic or adapted materials in the language classroom. Penny Ur (1991) outlines the following series of activities that English language teachers can implement to enhance listening skills in the classroom, including ticking off items. In this activity, listeners are provided with a list, text, or picture, and they tick some words or components off as they hear them within a spoken description, story, or simple list of items.



- True/False. Listeners are given a series of statements, then hear a passage and decide which statements are false or true.
- Detecting mistakes. The teacher tells a story or describes something the students already know, but with several deliberate mistakes or inconsistencies. Listeners raise their hands or call out when they hear something is wrong.
- Cloze. To carry out this activity, listeners hear a listening text with occasional brief gaps represented by silence or some buzz. Students need to guess the word or words to complete the text.
- Guessing definitions. Teachers provide a brief oral definition of a person, place, thing, or action, and learners need to guess what they think it is.
- Skimming. Learners hear a relatively short text and are asked to identify a general topic or information.
- Scanning. Students are given a listening text and required to identify some limited and specific information.
- Answering questions. Students are given an advanced questionnaire demanding complete responses, and the answers are provided in a listening text.
- Note-taking. Students can take notes from a short lecture or talk, and their notes can be shared to lead a group discussion of the most relevant themes or ideas presented.
- Paraphrasing and translating. Learners rewrite the listening texts in different words, either in the same language (paraphrase), in their mother language (translate), or in a different language (translate).
- Summarizing. Students write a summary of the content of a listening text.
- Filling long gaps. A long gap is left at any given point in a text; learners write down or say what they think is missing. Then, they hear the complete listening text and compare the real information with their previous ideas.
- Problem solving. A problem is described orally; learners must discuss how to deal with it and/ or write down a suggested solution.
- Interpretation. An extract from a dialogue or monologue is provided with no previous information; the listeners try to guess different components of such dialogue, such as the genre, the tone, the voices, and other kinds of evidence about the text.



Technology-based approaches

Technology has become integral to language education in today's digital age. English Language Teaching (ELT) has also embraced digital resources to enhance language skills, including listening.

Using digital resources allows learners to improve their listening skills with the different digital resources available and the best practices and strategies for listening instruction inside and outside the language classrooms (Cardenas, 2023).

One of the primary benefits of using digital resources for listening in ELT is the improved engagement and motivation among students. Traditional listening materials, such as audio tapes or CDs, often fail to capture students' interest and enthusiasm. However, digital resources provide multimedia content, including videos, podcasts, and interactive exercises, which can captivate learners and make the listening experience more enjoyable.

Furthermore, digital resources offer enhanced accessibility to authentic listening materials. In the past, teachers had limited access to real-life listening materials, making it challenging to expose students to different accents, speech patterns, and genres (Cardenas, 2023). Digital resources allow teachers to easily access a wide range of authentic listening materials from around the world, exposing students to diverse linguistic contexts and helping them develop their listening skills in a more realistic and meaningful way.

Additionally, digital resources provide increased opportunities for autonomous learning and practice. Students can access these resources conveniently, allowing them to engage in self-directed listening activities outside the classroom. This autonomy enables learners to set their own pace, choose materials that match their interests and language level, and engage in repeated practice, which is crucial for developing listening proficiency (Henner Stanchina, 1987).

Real-world approaches

In our daily lives, we encounter various situations requiring different listening types. We listen differently to obtain information, improve a relationship, gain an appreciation for something, make discriminations, or engage in critical evaluation. There are different ways to improve our listening skills when learning English. According to Joan Rubin (1998), practical listening skills can be acquired through the following strategies:

Dictation Audio – Dictation Audio is dictating words in an audio format. These also help one to learn new vocabulary. One can listen to Dictation Audio through Online Dictation, Digital Dictation Software, and Audio / Video Tapes.

Listening to Radio – Listening to the English language Radio stations enhance one's listening capacity and understanding of the language. One can hear any program, such as news, podcasts, or even advertisements, to one's benefit.

Music / Songs – English Language Songs are the most popular world over. One can listen to these anytime or anywhere, even on foreign-language radio and TV stations. One should listen to them often. Aspirants can buy cassette CDs, download them, and borrow them from various sources. One can also record these from various audio-video sources. Initially, one should choose slow songs, and the words sung are clear. One can try to write the words for an entire song in order to understand the song.

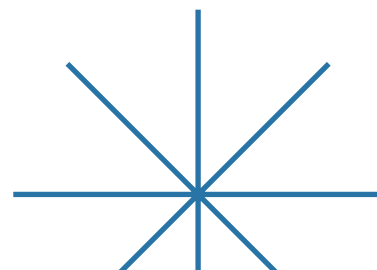
Listening to webcasts – A webcast is a media file distributed over the Internet using streaming media technology to distribute a single content source to many simultaneous locations locally or internationally.

These can be in the format of stations like the BBC or Voice of America. Most sites work with two players – the RealPlayer and the Windows Media Player.

English as a Second Language website – ESL (English as a second language), ESOL (English for speakers of other languages), and EFL (English as a foreign language) all refer to the use or study of English by speakers with a different native language. ESL is a top free online English-learning resource, especially for all teachers and students worldwide.

English as a Second Language Podcast – A podcast is a multimedia file that is distributed over the internet for playback on a mobile device or a personal computer. It is one of the new ways of learning to speak English, especially for tech-savvy people. The website mentioned provides http://www.eslpod.com/website/index_new.html

Watching Television – TV is the most common resource for hearing and listening to English. The pictures help understand what is being said. One can watch TV on the Internet if they do not have access to English-language TV.



Cinema—Cinema is another common medium that helps improve one's listening skills. Non-English-speaking Countries have cinemas that show films in English, usually with subtitles. Make it a habit to go to these films. Even if one does not know how to read English, they will still hear it. One can also attend English Film festivals whenever they are held in their country or region.

Making English-speaking friends is another easy way for those who wish to understand English. One can practice his/her English through conversation. Friends become teachers by correcting you as well.

Reading – Those who are beginners can start with reading children's storybooks. Moreover, they can move on to novels when their vocabulary has been acquired. Reading is listening; when we read aloud or in our minds, we hear ourselves reading the words.

Visiting an English-Speaking Country – For those who can afford it, touring an English-speaking country can be a fun-filled experience. Hearing the natives talk is the easiest way of understanding English. One can stay with an English family as well.

Issues regarding listening skills in foreign language learning

We can summarize that there are many ways to enhance listening comprehension of the target language; however, educators must consider all the difficulties involved in developing this crucial skill. According to Penny Ur (1991), some challenges language learners encounter are:

1. Trouble with sounds. Listeners are sometimes unaware of inaccurate sound perception. Some causes are mother language interference (cognates, false cognates) and phonological differences.
2. Listeners need to understand every word, which might lead to frustration and ineffective comprehension.
3. Listeners cannot understand fast, natural speech, so it is important that students start their learning process with adapted materials and gradually move to authentic materials as their language learning process progresses.

4. Need to hear things more than once. Most classroom listening activities allow students to listen to text several times. However, listening practice needs to mirror natural language acquisition.

In real life, most listeners must deal with “one-off” listening. Consequently, that must be one of the goals of effectively developing listening skills in the language classroom. One way to achieve this is by providing students with listening texts in which essential information is presented more than once.

5. Find it challenging to keep up. Learners might feel overloaded with incoming information. One way to help them overcome this difficulty is to help them to distinguish what is essential to understand the message and discriminate the rest.

6. Get tired. To avoid this, information could be segmented into “chunks” by pausing the text and providing feedback if necessary.

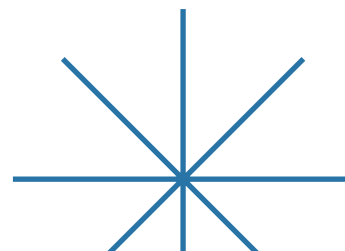
Teachers and digital competencies.

Teachers must be aware of the latest technology and digital resources to improve language learners’ listening skills; this involves the development of digital competencies among language teachers. Some years ago, language teachers used only cassettes and tape recorders. However, as technology evolved, language teachers encountered the challenge of developing new competencies to cope with such challenges. They had to learn to use computers, make recordings, look for information on the net, create materials, and upload them on internet-specialized sites.

The need for a technology-competent teacher was probably substantial in linguistics because many resources and materials changed and shaped how language learning and teaching was conducted.

Of all the language skills involved in language acquisition, listening is probably the one that has been more affected and influenced by emerging technology and resources. They have played an important role in acquiring a second language, and their evolution is seen in the recorded texts in cassettes and CDs and all the vast online resources available to students.

The main difficulty when trying to select the best materials to enhance language learners’ listening skills was probably the lack of materials, the cost of these, and sometimes the quality of the sound or the recordings. Additionally, cassettes needed to push the forward or backward button constantly, and tapes used to get damaged easily. CDs improved the sound quality and helped teachers locate the tracks they needed more quickly.



Although more online resources are available these days, it is quite challenging for teachers to select the most suitable resources and materials for their students. Teachers must spend much time trying to keep up with all the emerging resources available. Selecting the best online materials for foreign language learning to enhance the listening skill of students is not easy for teachers, yet the advantages of including these have a positive impact on students' language learning process.

Most learners enjoy using technology, and teachers should take advantage of this to enhance language learning inside and outside the classroom (Al-Alwan, Asassfeh, & Al-Shboul 2013).

Strategies to enhance listening skills in English language learning using digital resources.

Listening strategies are key for students to enhance their listening comprehension of a second language. Learners need to be aware of these strategies because most authentic listening materials do not usually include vocabulary lists, warm-up materials, or comprehension questions. According to Penny Ur (2008), explicit learning strategies can be integrated at different points in the process, including:

- Pre-listening expectation and goal setting, followed by assessment
- Metacognitive awareness of comprehension
- Research strategies for understanding new vocabulary or grammatical structures
- Social strategies for getting an understanding from other people
- Recording and reflecting on progress over time

Self-awareness is a key part of this process as well. It is advisable to set achievable comprehension goals to lessen the stress of understanding every word or the pressure of listening to it several times. Classroom practice is crucial in implementing and revising the formerly mentioned strategies, especially with teachers modeling the activities and providing feedback at every stage. Some steps that might be carried out during listening activities are as follows:

Before listening

Learners look at the title, context, characters, source, etc., and brainstorm the topics, vocabulary, and information. Teachers brainstorm ideas so students can develop clear listening objectives from the task.

While listening

Learners compare reality with their expectations. Students put into practice their skimming and scanning strategies to understand the whole context and identify specific information from the listening text.

Post listening

Teachers elicit students' responses, clarify concepts, and provide feedback. Teachers help learners reflect on whether they have met their activity goals or if revising the activity at a different audio speed or pause is necessary. This process can be very effective, and technology can also be beneficial. Using the tools that people already use in their daily lives is a great way to help learners develop an easy, comfortable routine to their language development. Podcasts, online video, and media outlets that offer audio or video versions of their stories have some of these same features.

Digital resources and tools to improve listening skills.

There are various types of digital resources available to improve listening in ELT. Online audio and video platforms, such as YouTube, TED Talks, and BBC Learning English, offer a vast collection of authentic listening materials that cater to different language levels and interests.

These platforms expose learners to various accents, topics, and genres, allowing them to develop their listening comprehension skills more authentically and engagingly.

Language learning apps and software, such as Duolingo and Rosetta Stone, also offer listening exercises and activities that are specifically designed to improve listening skills. These apps often provide interactive features, such as voice recognition and

instant feedback, which help learners practice and refine their listening abilities in a personalized and interactive manner.

Furthermore, interactive listening activities and exercises, available through online platforms or learning management systems, allow students to actively engage with the listening materials. These activities often include comprehension questions, gap-fill exercises, and dictation tasks, which test listening comprehension and promote active engagement and critical thinking skills (Vandergrift, 2007).

When incorporating digital resources in listening instruction, selecting appropriate and relevant materials that align with specific language levels and learning objectives is crucial. Teachers should consider the materials' linguistic complexity, vocabulary, and cultural relevance to ensure they are suitable for their students' proficiency level. Moreover, providing guidance and scaffolding is essential to effectively support learners in using digital resources. Teachers can create pre-listening activities to activate students' background knowledge, introduce key vocabulary, and set clear listening goals. These are some of the most popular digital resources among teachers and language learners:

Youtube (<http://www.youtube.com>)

This is probably the site with more listening materials for foreign language learning. The most significant advantage of Youtube is that it offers many authentic and adapted videos that can be used to enhance learners' listening skills. YouTube offers a few excellent features that give learners much support in their language development:

The speed of a video can be adjusted, and closed captions can be used for many videos by clicking the "CC" button. People transcribe some of these, but the virtual machine does most of them, so there might be some issues, especially with proper nouns or fast, casual speech. It is also possible to see the closed caption text compiled into a transcript by clicking the Extra Options (...) button and then "Open Transcript". The teaching and learning possibilities for acquiring a second language using videos are endless and have many advantages. Some advantages are the constant creation of new materials, the different accents that students are exposed to, and the motivation of students when using videos inside and outside the language classrooms.

Lingua (<https://lingua.com/english/listening/>)

This site offers online audio exercises that learners can listen to improve their listening skills. The listening materials are divided according to the levels established in the Common European Framework of Reference (CEFR) for language learning. Students are required to listen to spoken text in English and then answer questions about what they heard to find out if they understood the text. Immediately, feedback is also provided. Learners can also select the pronuncia-

tion of their choice; they listen to American or British English. The site has a free version with limited activities and a paid version.

ESL video

(https://www.eslvideo.com/quizzes_beginning.php)

This site is an excellent tool for teachers and learners of English as a second and foreign language. Learners can choose from many videos with listening activities, and teachers can create their own materials. Additionally, teachers can have classroom codes they can share with their students to see and record their students' grades in the listening exercises. Teachers are also allowed to keep their materials private or share them and make them public so the site's audience can use them. This site also divides the activities according to the CEFR levels and is free for both learners and teachers.

Agenda Web

(<https://agendaweb.org/listening-exercises.html>)

Agenda web is a site that allows learners to practice and improve different English language learning skills. This site has a section where students can access listening texts with different activities and immediate feedback afterward. The materials are also organized by the levels established at the CEFR and also by topics. The main advantage of this site is that it is free and has a wide range of materials students can use.

British Council podcasts

(<https://learnenglish.britishcouncil.org/general-english/audio-series/podcasts>)

Podcasts are a great resource to enhance students' listening skills, and many different sites provide learners with native English speeches. The British council site is one of these sites with great resources for English language learners. Unfortunately, the site does not have materials for beginners or false beginners. However, intermediate and advance students will benefit from the existing materials at the site; the instructions are clear, and immediate feedback is provided.

Podcasts in English

(<https://www.podcastsinenglish.com/>)

This site contains materials for foreign English language learners of all levels. The site also allows students to download podcasts, access the transcripts, and the worksheets. The site contains some free podcasts but has a paid version. The main objective of podcasts is to provide learners with exposure to native speakers' language so they can train themselves to listen and understand a spoken text at a regular speed, as well as pronunciation and intonation from different native English speakers. This is why most English learning podcast sites offer materials primarily for intermediate and advanced students of English. Some other free podcast sites are: The English We Speak, English Learning for Curious Minds by Leonardo English, All Ears English, and Espresso English.



Conclusion

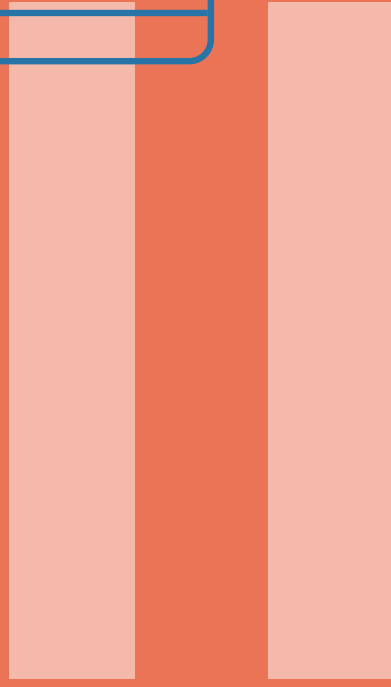
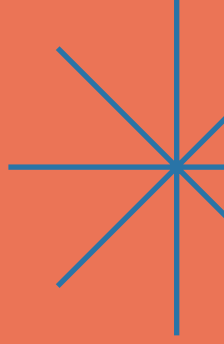
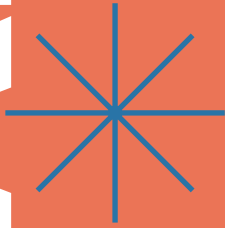
In today's digital era, various resources and tools have significantly impacted English language learning, especially in developing listening skills. The introduction of digital resources and tools has revolutionized how English language learners acquire and improve their listening skills. With the advent of technology, language learners now have unlimited digital resources that enhance their listening comprehension and overall linguistic development (Cardenas, 2023).

One significant impact of digital resources in English language learning is the increased availability of authentic listening materials. In the past, English language learners were limited in using textbooks, cassettes, and CDs, which often presented staged or unnatural dialogues. However, with digital resources, learners can now access a vast range of real-life audio and video materials. For instance, popular language learning applications like Duolingo or Babbel offer engaging and dynamic exercises using authentic audio and video clips from real-life conversations and movies.

Such authentic materials help learners develop their listening skills by exposing them to diverse accents, colloquial language, and natural speech patterns. Moreover, using digital tools empowers learners to practice listening skills conveniently. Online platforms facilitate self-paced learning, allowing students to select audio or video resources based on their skill level and personal interests. Digital resources and tools also provide interactive listening practice opportunities, creating an immersive and engaging learning experience. Online discussion forums, language exchange platforms, and virtual classrooms enable learners worldwide to connect and engage in meaningful conversations. Summarizing, including digital resources, positively impacts acquiring and improving language learners' listening skills.

References

- Al-Alwan, A., Asassfeh, S., & Al-Shboul, Y. (2013). EFL Learners' Listening Comprehension and Awareness of Metacognitive Strategies: How Are They Related? *International Education Studies*, 6(9), 31-39.
- <http://dx.doi.org/10.5539/ies.v6n9p31>
- Bozorgian, H. (2012). Metacognitive Instruction Does Improve Listening Comprehension. *International Scholarly Research Network*, 1-6. <http://dx.doi.org/10.5402/2012/734085>
- Brown, G., & Yule, G. (1983). *Cambridge textbooks in linguistics: Discourse analysis*. Cambridge University Press.
- Buck, G. (2001). *Assessing Listening*. Cambridge: Cambridge University Press. <http://dx.doi.org/10.1017/CBO9780511732959>
- Cardenas, J. (2023). Use of multimedia resources to improve listening skills in young learners. *Revista Científica Sinapsis*, 1(22). <https://doi.org/10.37117/s.v1i22.746>
- Goss, B. (1982). Listening as Information Processing. *Communication Quarterly*, 30, 304-307. <http://dx.doi.org/10.1080/01463378209369465>
- Dirven, R., & Oakeshott-Taylor, J. (1984). Listening Comprehension (Part I). *Language Teaching: The International Abstracting Journal for Language Teachers and Applied Linguistics*, 17(4), 326-343. <http://dx.doi.org/10.1017/S026144480001082X>
- Hamouda, A. (2013). An Investigation of Listening Comprehension Problems Encountered by Saudi Students in the EL Listening Classroom. *International Journal of Academic Research in Progressive Education and Development*, 2(2), 113-15.
- Harmer, J. (2001). *The practice of English language teaching* (3a ed.). Longman.
- Morley, J. (2001). Aural Comprehension Instruction: Principles and Practices. In M. Celce-Murcia (Ed.), *Teaching English as a Second or Foreign Language*. Boston: Heinle and Heinle.
- Rost, M. (2002). *Teaching and Researching Listening*. London: Longman.
- Rost, M. (2011). *Teaching and researching listening* (2nd ed.). Harlow, England: Longman.
- Rubin, J. (1988). *Improving Foreign Language Listening Comprehension*. Washington DC: US Department of Education.
- Ur, P. (1984). *Cambridge handbooks for language teachers: Teaching listening comprehension*. Cambridge University Press.
- Ur, P. (1996). *A Course in Language Teaching. Practice and theory*. Klett.
- Vandergrift, L. (2007). Recent Development in Second Language Listening Comprehension. Research. In Graeme Porte (Ed.), *Language Teaching: Surveys and Studies*. (pp. 291-210) Cambridge University Press, Canada. <http://dx.doi.org/10.1017/s0261444807004338>



Digital Resources to Improve Reading Skills

Elida Sánchez Cruz

Abstract

Nowadays, globalization and technological advances offer diverse challenges and opportunities for people; however, the abundance of online content and easy access to platforms like Netflix, Prime Video, and Disney+, among others, can also make reading less attractive for higher education students. The goal of this chapter is to explore how to use these same technological expansions to encourage the habit of reading among second language learners. It highlights various applications and online resources designed to engage readers in a globalized digital environment, from e-book reading platforms to interactive applications using various techniques, such as singing. These resources facilitate access to texts and make them more motivating and engaging to people of different ages and skill levels.

In addition, this chapter describes how to develop reading skills, allowing readers worldwide to access texts relevant to them. Globalization, in this sense, is not only a context but an opportunity for reading to trespass borders and access the diverse English content offered by the digital world.

Introduction

With globalization, communication between countries and people through social networks, cell phones, movies, series, music, books, scientific articles, and applications is significant. The world is interconnected, and communication plays a significant role in people's well-being and scientific advances. Still, it is essential to read in English, considering its benefits.



According to Lu (2024), English has 1 500, 000, 000, 000 speakers worldwide, followed by Mandarin with 1, 100, 000, 000, 000, and in third place Hindi with 609 500, 000 speakers. The difference between English, on the one hand, and Mandarin and Hindi, on the other hand, is that most Mandarin and Hindi speakers are in China and India, respectively, while the population of English speakers is spread all over the planet. Therefore, it can be said that English is the most widely spoken language in the world. In addition to the above, English is taught as a second language in most non-English-speaking countries; the number of English speakers is growing daily. The teaching of English is becoming more prominent in educational programs worldwide, and governments are seeking to promote the teaching and learning of English using technology. However, policymakers also require evidence on the most effective policies, approaches, and teaching methods to provide students with the skills needed, both now and in the future, to meet the needs of this globalized, gadget-driven world. In the United States, mobile phone use continues to be widespread in later adolescence, with over 95% of teens aged 13 to 17 having access to a cell phone (Anderson, Jiang, Pew Research Center, 2018); thus, using gadgets for learning is essential. With technology, learners use tablets, computers, or smartphones daily. The onset and widespread use of mobile technology during adolescence coincides with a pivotal period of cognitive, emotional, and social growth. Young people between the ages of 10 and 25 transition from childhood to adulthood (Richter, Adkins, Selkie, 2022). In higher education institutions, it is common to find at least one of these electronic devices on the desks of both students and teachers. Here, English, communication, and electronic gadgets form an indivisible link that facilitates the exchange of knowledge and social advances. In addition, the Internet allows access to many applications and digital resources that facilitate language acquisition.

In the technological age and an increasingly interconnected world, reading has become a fundamental skill for communication. Even without being in a country where scientific advances are being made and technology is being produced, it is possible to keep up to date in any field, especially when the information is in English. In addition, electronic devices allow students to choose the time and place to study or catch up on topics that interest them, promoting autonomy by facilitating access to information at the click of a button. This chapter will encourage the use of technology and recommend some applications and resources; thus, it is divided into main text, strategies, a list of resources, and conclusions.

The four fundamental skills in language acquisition are reading, writing, listening, and speaking, which are divided into receptive and productive skills. Productive skills include speaking and writing, while receptive skills encompass reading and listening. Reading, in particular, is a process that develops through the observation of written symbols and the interpretation of their meaning. When reading, elements like letters, dots, and spaces are recognized and combined to form words conveying a message the reader understands. Reading is a continuous process that combines written text and prior knowledge to construct meaning. The ultimate goal of reading is meaning, comprehension, and understanding (Anderson, 2003).

Reading instruction can be approached from two main perspectives (Anderson, 2003); the first focuses on those learning to read for the first time. The second is aimed at people who already have reading skills in their native language. Learning to read is a one-time process; after mastering reading in one language, it is not necessary to relearn it in a second language but rather to apply the skills already acquired to the reading context of a new language (Anderson, 2003). Thus, it is not necessary to teach English learners to read; improving the strategies they use for text comprehension is indispensable.

Dr. Stephen Krashen, an expert in second language acquisition, highlights the importance of reading in improving linguistic skills, such as text comprehension, vocabulary, grammar, and spelling. He also mentions that reading is an enjoyable activity that boosts cognitive development and decreases writing anxiety (Krashen, 2004); that is, it impacts receptive and productive levels. To improve reading strategies in L2, the ACTFL Language Connects (2017) suggests that:

Technology can enhance second language reading instruction by providing authentic and engaging materials from the target culture.

Instructors can use technology to differentiate instruction by assigning varied tasks, tracking data, and providing real-time feedback.

Technology allows students to practice specific reading skills through online games and applications.

Allows students to access authentic materials from the target culture anytime, anywhere.

Facilitates personalized learning experiences tailored to each student's individual needs.

Provides opportunities for online collaborative reading activities.

Supports self-paced learning and review of reading materials.

Therefore, technology is suggested to advance reading skills among second language learners. Heil et al. (2016) point out three main weaknesses in technological applications: first, they tend to teach vocabulary as isolated units rather than within meaningful contexts; second, they offer little customization according to each user's skill level; and third, they rarely provide corrective feedback that explains errors to users. The following section discusses some applications considering the principles of Heil et al. (2016).

Strategies

Heil's (et al., 2016) recommendations.

	Description	Lirica is a fun application that uses popular songs and videos. It breaks down the lyrics to facilitate the learning of vocabulary and grammar. In addition, it offers explanations of colloquial language.
	Vocabulary	Vocabulary is taught through songs, i.e., in context.
	Skill level	Songs are divided by levels.
	Feedback	No feedback.

	Description	It offers the opportunity to access a wide variety of texts. The application allows learners to decide what level they want to practice and select a topic, for example, travel, culture, or language.
	Vocabulary	Vocabulary in context.
	Skill level	The lessons and the library are divided by levels.
	Feedback	Provides feedback for new and familiar vocabulary. In addition, it offers a dictionary in various languages, including English.

	Description	It is an application where you can find texts. Learners can also add more readings as they see fit.
	Vocabulary	Vocabulary is provided throughout the text or songs.
	Skill level	It provides a ruler to specify the level of difficulty. Starting from beginner to advanced.
	Feedback	A dictionary that translates into other languages, including English.

	Description	The application is free of charge. Learners need a server as their computer to store information. The community can make modifications, edit, or improve content.
	Vocabulary	Texts can be uploaded, modified, or edited by users.
	Skill level	-
	Feedback	Dictionaries are provided to look up the meaning of words as they progress through the readings.

**Description**

Free application. Users can upload any text they wish.

Vocabulary

Vocabulary can be translated with the application's dictionary. It is given through context and translation.

Skill level

-

Feedback

A dictionary is provided to translate words.

**Description**

It is a free and fast application. It is possible to load new texts.

Vocabulary

The unknown vocabulary is searched for through the web.

Skill level

-

Feedback

Unfamiliar words are searched for on the web.

**Description**

It is an application for the four skills. Learners have access to forums where they can also exchange comments.

Vocabulary

Vocabulary is provided in context, and access to dictionaries and teachers is available.

Skill level

It is by levels.

Feedback

It offers the possibility of feedback from a teacher. Vocabulary meaning with dictionaries is also provided.

**Description**

It offers a wide range of readings.

Vocabulary

Translation of words with the use of a dictionary.

Skill level

It is by levels.

Feedback

Feedback through word translation.

**Description**

It offers more than 7,500 lectures and hundreds of topics.

Vocabulary

Offers translation of words.

Skill level

It is by levels.

Feedback

Learners have access to expert feedback.

The applications analyzed in the previous table offer the possibility of developing reading skills and, according to Krashen (2004), writing skills. Some applications offer texts divided by level; in others, the users must upload their text and work on it from the platform. The applications offer feedback limited to translating words or concepts in the target language. Some of the platforms offer the possibility of audiobooks or songs, which makes it easier for users to learn the correct pronunciation.

List of resources

In addition to applications, technology also offers access to some resources that facilitate and support reading. All that is needed to access the resources is a device and access to the Internet. Some online resources are described below.

<https://www.readinga-z.com/comprehension/close-reading-packs/>

Make students engage in critical thinking to explore the multiple layers of meaning within a text, enhancing their understanding. Close Read Passages involve reading the text multiple times, each with a specific purpose and guided by scaffolded questions that promote discussion across four levels of English. Through Close Reading Packs, students focus on a Key Question while reading passages on a shared theme and then participate in small-group and class-wide discussions.

<https://www.raz-plus.com/project-based-learning/project-based-learning-packs/>

Project-based learning (PBL) packs is a teaching method that centers on learning through hands-on projects tackling real-world challenges. Unlike traditional approaches, which often emphasize direct instruction, memorization, and standardized testing, PBL immerses students in their learning through inquiry, collaboration, and practical application of knowledge. This method enhances the relevance and impact of learning and prepares students with valuable skills for the future.

<https://www.goodreads.com/genres/graphic-novels>

Inspire and engage even the most hesitant readers with this collection of visually captivating books. Graphic Books bring the informational text to life and can be used independently or alongside a related informational book on the same subject. The comic strip style of the Comic Books and the straightforward, captioned photos in Humor Books add an element of fun to reading.

<https://www.readinga-z.com/books/classics/>

Using authentic texts is a key component of today's high standards in education. The Classics collection allows students to explore renowned works and authors in literature. These complex texts offer varied perspectives, layered meanings, and skillful language that challenge and inspire readers, helping them to build close reading and comprehension skills.

<https://www.raz-plus.com/books/themed-nonfiction-series/>

Leverage the Themed Nonfiction Series to offer students targeted content-area and literacy instruction. Each book collection centers on a specific topic to help students build knowledge. This piece is tailored to particular levels; each series includes books with varying levels of text complexity, supporting differentiated instruction. All books are accessible in both printable and projectable formats.

<https://www.readingrockets.org/classroom/content-area-literacy>

Enhance learners' reading block by integrating diverse content types, or use these resources to support classes like Social Studies, Science, or Art. The Content Area Reading section offers books focused on:

Art & Music

Math

Science

Social Stories

Social Studies

Students can strengthen fluency, comprehension, and vocabulary by exploring various text types across academic subjects and complexity levels. This extensive collection equips them to grasp key classroom concepts and helps them practice skills essential for today's standardized tests.

<https://wowlit.org/links/booklists/paired-book-picture-book-sets/>

Encourage higher-order thinking, like comparing texts with Paired Books, offering three types of pairings: fiction-nonfiction, fiction-fiction, and nonfiction-nonfiction. Students first respond to text-dependent questions for each text individually, then address questions about both texts together, leading them to answer an overarching key question.

Each lesson includes a graphic organizer for recording information linked to each question set, and students support their answers with cited evidence.

<https://www.raz-plus.com/books/books-by-grade-level/>

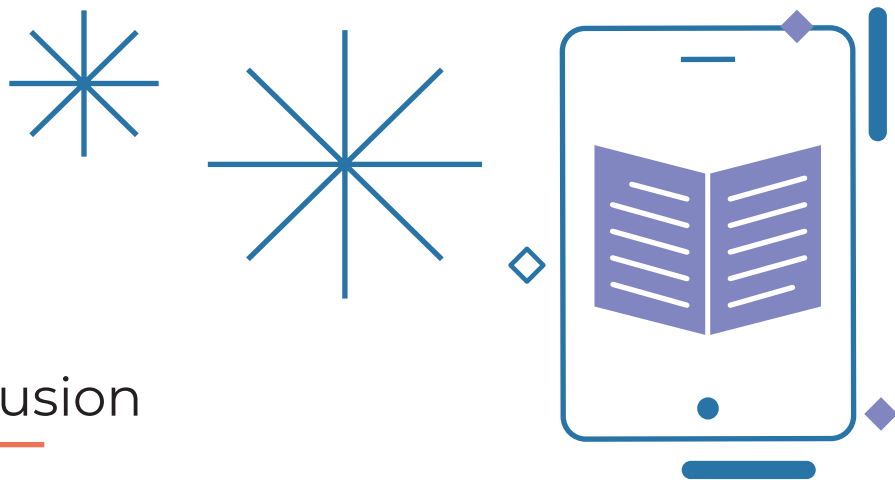
Multilevel Books enable teachers to make the most of instruction time by using the same content to reach students at different reading levels. Teachers can tailor the lesson to accommodate varying reading abilities by focusing on a single book, allowing for effective whole-class instruction. To find these books, use the “In Multilevel Set” filter.

<https://www.gutenberg.org/>

Project Gutenberg grants access to over 50,000 free e-books, primarily classic literature like *The Adventures of Tom Sawyer* and *Great Expectations*. These books are available in multiple formats, including ePub and HTML, making it an invaluable reading resource to keep students engaged for hours!

<https://www.dogonews.com/>

DOGO News is an excellent reading resource featuring kid-friendly articles on current events, sports, science, technology, and so forth. Each article includes links to definitions for challenging words, and content can be searched by grade level or topic, with links to national standards. Articles are free to access, while premium options offer teachers worksheets, activities, and additional materials to complement the articles.

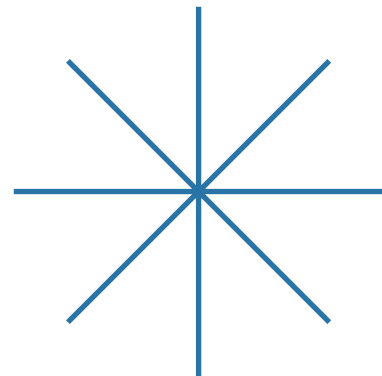


Conclusion

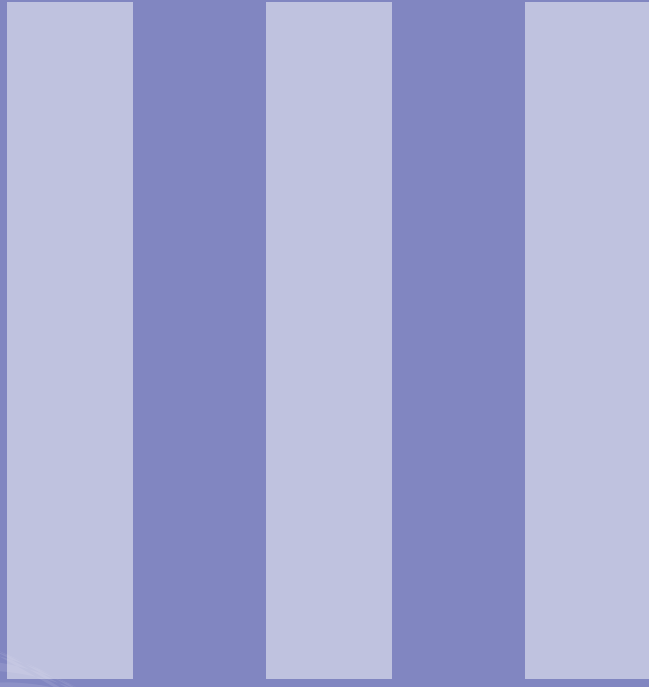
Thanks to globalization and technological advancements, second language learners worldwide now have access to entertainment platforms and learning platforms that make English fun and flexible, allowing them to study from their convenient location. These websites and platforms overcome geographical barriers and offer a personalized learning experience tailored to different levels, learning styles, and paces.

References

- ACTFL Language Connects. (2017). The role of technology in language learning. Retrieved from: <https://www.actfl.org/news/the-role-of-technology-in-language-learning>
- Anderson, M; Jiang, J.; Pew Research Center. (2018). Teens, social media and technology 2018. Washington DC. Retrieved from: <https://www.pewresearch.org/internet/2018/05/31/teens-social-media-technology-2018/>
- Anderson, N. (2003). Reading. In D. Nunan (Ed.), Practical English language teaching, (pp. 67-86). Singapore: McGraHill
- Heil, C. R.; Wu, J. S.; Lee, J. J.; y Schmidh, T. (2016). A Review of Mobile Language Learning Applications: Trends, Challenges, and Opportunities. The EUROCALL Review, 24 (2), pp. 32-50
- Krashen, S. (2004). The power of reading. The United States of America: Libraries unlimited.
- Lu, M. (February 29, 2024). Ranked: The top languages spoken in the world. <https://www.visualcapitalist.com/top-languages-spoken-in-the-world/>
- Richter, A.; Adkins, V.; Selkie, E. (2022). Youth Perspectives on the Recommended Age of Mobile Phone Adoption: Survey Study. JMIR Pediatr. Parent. 5 (4). Retrieved from: <https://pediatrics.jmir.org/2022/4/e40704/>



CHAPTER.



Developing language writing in the digital era: resources and tools

Antonio Iván Sánchez Huerta

Tito Antonio Mata Vicencio

Introduction

People write for different reasons: to express emotions and feelings, to share thoughts and opinions, to establish relationships or transactions, to ask for or to provide information to others, to teach or educate others, or to leave a more permanent mark in the world or their community. Permanent is a key word here because writing can be regarded as making speech visible, concrete, and therefore, more permanent. Writing is both a process and a product. It is a process because the writer thinks, organizes, drafts, writes, and rewrites; it is also a product because what the reader sees, eventually, is a product: a story, a message, a report (Sokolik, 2003, p. 88).

Writing in English has always been important in second language learning and teaching, but in the twenty-first century, it may have become more important than ever. This is due to globalization and technological advances such as the development of the Internet, which have made written communication between different peoples and cultures essential in many fields like business and education (Weigle, 2014, p. 222). Many students worldwide need to write academic texts in English at the university; many businesses and organizations require their employees to be able to write reports, letters, brochures, memos and other written texts in English; besides, the growth of social media has had a significant influence on the increasing number of electronic communications (Richards, 2015, p. 479).



Hyland (2019, p. 137) states that being literate nowadays means controlling a range of print and electronic media. New technologies have transformed how we write, the genres we create, and the forms of our finished products. Individuals, particularly learners, regularly use digital technologies to create written texts, whether social media posts, text messages, emails, reports, infographics, or presentations. Information and communication technologies have significantly impacted all facets of writing (Hyland 2022, p. 67). At the same time, Information Technology and digital tools have become efficient tools to support writing tasks, especially with the advent of Artificial Intelligence (Thaine, 2023, p. 11). Considering the influence of new technologies on writing and specifically, on second language writing, this paper aims at providing English as a second language teachers with an overview of writing approaches, the present influence and use of digital tools, as well as strategies with resources and general activities to teach second language writing in the era of digital technology.

Writing is a language skill that people use to communicate by means of visible or tactile symbols, letters, or characters. As a skill, it needs to be developed with practice, and it can be a challenge for students who are learning to write a second language. In the field of teaching English as a Second language (ESL), it seems to have been a neglected skill, especially when the emphasis on learning to write is on the ability to communicate. In the past, ESL students did not have as much access to written texts as they do now; nowadays, they can read a variety of texts in the different media and use a variety of digital tools to send written messages for different purposes. As Weigle (2014, p. 223-223) states, globalization, technological advancement and the Internet have made written communication essential in many fields, and the number of people who need to write in a second language has increased. That is the reason why recently writing has taken a more central place in English Language Teaching.

[However, developing the ESL writing ability is still challenging for teachers and learners. There are certainly digital aids such as Artificial Intelligence tools, which can help an apparent 'writer' to produce a whole text or parts of a text with very little input, such as a few words entered into a program (Thaine 2023, p. 10). However, this 'achievement' does not tell us very much about the writing ability of the apparent writer. We need to take into account the new contexts in the era of digital technology, but the basic writing needs of the learner remain the same: coherence, cohesion, appropriate use of language structures, clarity and organization, genre features, accuracy, text fluency and friendliness, as well as responding to the audience needs.

Teaching approaches to writing

Different approaches have emerged and been applied in language courses in the history of language teaching to help learners develop their writing ability. Based on our experience teaching ESL writing, an eclectic approach to teaching writing seems a good option to obtain the best from each perspective. Therefore, we will present a short overview of approaches based on Hyland 2019, Hyland 2022 and Richards 2015. The approaches are the following:

Focus on Language Structures:

The Text-as-Object Approach

The focus is on grammar and formal units of texts. Writing in a second language requires linguistic knowledge and control of vocabulary, syntax, and cohesive devices. It is a way to practice and learn grammar and vocabulary, achieve accuracy and avoid errors. Learners manipulate patterns and imitate model texts. Activities include controlled composition, gap-filling, or substitution.

Focus on Text Functions:

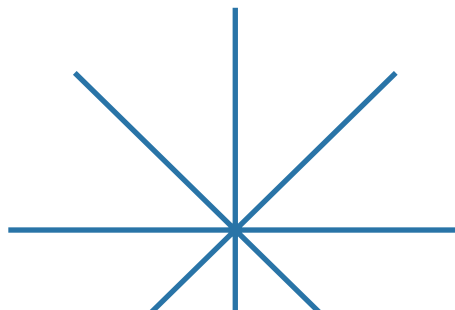
The Functional Approach

The focus is on how particular language forms perform specific functions. Students are taught functions of written English, such as exemplifying, classifying, narrating, comparing, contrasting, or describing. Students are assisted in developing coherent paragraphs, topic sentences, supporting sentences, and transitions. Activities include reordering, gap-filling, and writing from tables or parallel texts.

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Focus on Creative Expression:

The Creative Writing Approach

The focus is on writing as a personal expression. Writing is a creative act of discovery. It is learned, not taught. Instruction is non-directive; it is personal. Teachers are not supposed to impose their ideas or give models. The class focuses on students' personal experiences and opinions. Activities include reading, journal writing, and multiple drafting.

Focus on the Writing Process:

The Process Approach

The focus is on basic cognitive processes that teachers should develop to help learners complete a writing task. The activities in this approach include pre-writing tasks such as brainstorming and outlining, providing teacher and/or peer feedback, and editing. The role of the teacher is to help learners develop strategies for generating, drafting, and refining ideas. Activities include brainstorming, planning, multiple drafting, and portfolio assessment.

Focus on Content:

The Functional Approach

The focus is on the topics about which students have to write. The course or the writing tasks are organized around a set of topics, which provides coherence to the activities. Learners are supposed to have knowledge of these topics and write meaningfully about them. This approach relies heavily on reading because it provides the necessary input regarding content and the appropriate means of expression. Activities include intensive and extensive reading and group research projects.

Focus on Genre:

The Genre Approach

The focus is on text as discourse and on text types. Genres are recognized as types of communicative actions or texts. In the genre-oriented class, teachers present and discuss models, guiding students through the typical patterns, moves, or elements of a particular genre: a recount, a report, an argumentative essay, a description, or a movie review. Activities include analyzing and discussing texts regarding their sections or moves and typical language features, reordering, identifying, and applying them to their texts.

Here, it can be helpful to distinguish between writing-for-learning and writing-for-writing. If we do writing-for-learning, we try to help students learn a language or to test them. Thus, if we ask our students to write sentences using the past tense, we aim to help them remember the structure rather than train them to write. On the other hand, if we ask our students to write a narration, our objective is to help them become good at writing stories rather than only practicing the past tense forms (Harmer 2015, p. 369). Writing-for-learning can have a valid and useful pedagogical purpose: writing to practice the language. However, suppose we want our students to develop their writing skills. In that case, we need to go beyond mere language practice and use writing-for-writing activities, which also involve practicing a second language.

Writing in the era of digital technology

Digital technology involves using computers, mobile devices, and the Internet (Nation & Macalister, 2021, p. 135). It has had a significant impact on the way we write and on the types of texts that we produce. How we communicate our ideas has become increasingly rich and sophisticated (Quin & Stapleton, 2023). According to Nation and Macalister (2021, p. 137), the nature of writing has changed in four ways. First, new kinds of writing have emerged, such as texting, online chat, emails, blogs, and wikis, which can be done in a second language. Second, there are new and different sources for information, and learners need to develop information-gathering skills. Third, how we write has changed, making typing, computer voice recognition, and collaborative writing more common. Fourth, the way we obtain feedback on our writing has also changed.

The following are some characteristics and benefits of digital writing (Hyland 2019; Hyland 2022).

The use of computers and word processors.

Thanks to computers, writing is no longer constrained by linear development. Now drafting, editing, and revising can be done simultaneously. Learners can experiment with different forms of expression and organization. Also, it can be easier to avoid language mistakes and change formatting. Word processors allow readers to produce fast and non-linear drafting; brainstorming and time-focused freewriting can help students develop writing fluency. Besides, word processors facilitate editing by allowing for the jumbling and rearranging of texts.

Producing multimodal texts

Digital media allow writers to integrate images into their texts. Writing electronically involves assembling texts and images in new visual designs. Visuals can create richer and more engaging communication. Text can also incorporate audio or video.

Online writing

Online communication allows students to establish remote communication with other people. As a result, learners must develop the ability to communicate clearly and persuasively, with readable and attractive content, good syntax, clear ideas, and good information. Texts are not necessarily long, and writers may need to think in terms of paragraphs (for blogs or webpages) or sentences (for posts in X, formerly known as Twitter). The sense of audience is key when learners write texts online.

The following features of online writing forms: the main information must be salient (headings and topic sentences); they tend to be shorter; they use hypertext linking; they may include graphics and visuals; and they tend to be relatively informal. Also, the most important information must be clear from the beginning, especially with titles and topic sentences. Texts must be easy to search to attract readers and written in blocks to make readers continue reading.

Hyperlinking

On the Internet, writers are not limited by the constraints of the page. They can link their documents to other documents, which can be read non-linearly. Hypertext allows writers to connect different sites, media, and ideas, giving readers more freedom to approach the text. It should be emphasized that by writing for real audiences outside the classroom, students can be aware of new conventions and styles and the importance of proofreading their texts before publishing.

Social media platforms

Social media such as Facebook, X-Twitter, or Instagram have platforms which can be used to practice writing. Facebook and Instagram have groups and communities that can be open or private, and students can join a group created by the teacher or create their own group, where they can post and participate in forums about specific topics asynchronously.

Figure 3.1

Example of a writing group on Facebook

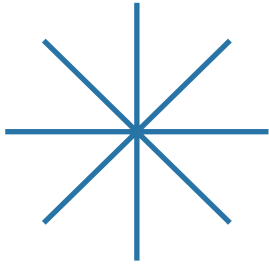
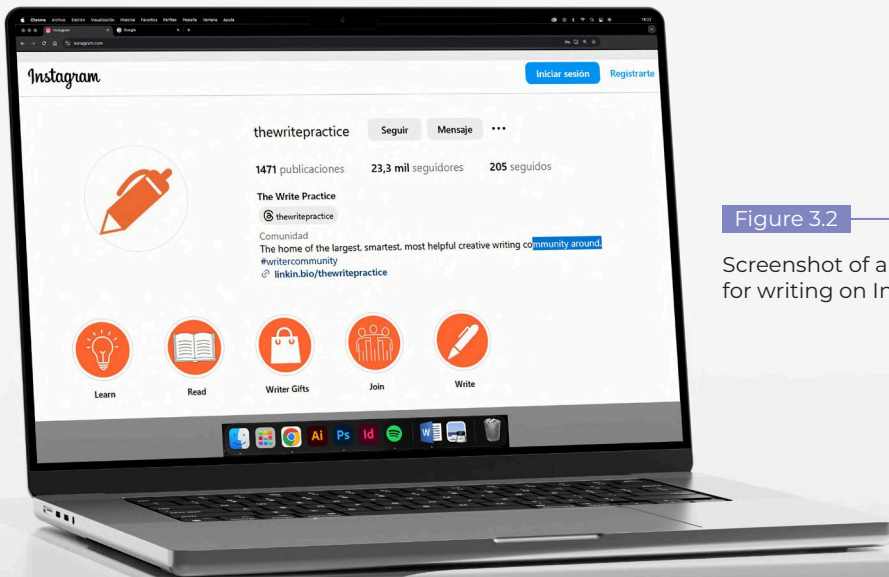


Figure 3.2

Screenshot of a community for writing on Instagram



X-Twitter posts are a form of “conversational exchange” (Honeycutt & Herring, cited in Hyland 2019, p. 146) where users can reply to posts long after they were produced.

Students can be asked to read posts to learn how they are structured and their style; they can also learn how to develop an argument and position it using replies, direct messages, and hashtags.

Collaborative writing, wikis, and blogs

As Hyland (2019) states, “the screen is a more public space than a page of paper,” and it can provide access to a group working together. Collaboration is encouraged by the sharing of electronic files for comments and reworking. Contributions can be asynchronous or real-time in collaborative writing apps such as Google Docs, Ether pad, or Drop-box.

Collaboration also occurs in wikis, cooperative web spaces where multiple writers can create and edit pages, without any defined owner or leader. Alternatively, blogs facilitate the quick and easy publication of content by multiple users; comments are essential in blogs and are a form of social and conversational writing.

Mobile technology

Contemporary mobile devices can go beyond the function of more traditional computers; they can be carried around and used at any time, and the device can obtain input relevant to a specific event or situation as needed (Stockwell, 2016, p. 535). Mobile technologies can encourage the use of more frequent and complex vocabulary and structures, as well as the ability to organize ideas visually, improving the quality and length of the written production (Wen & Walters, 2022). A mobile application that allows users to exchange delayed communication (or “letters”) with people worldwide is Slowly; it is a kind of pen pal app for users who wish to engage in conversations that are slower and more careful, similar to the traditional pen pal experience. This exchange of letters may contribute to students’ confidence in writing (Loman, 2024).

WhatsApp is regarded as the most popular communication tool globally, and its effectiveness in enhancing ESL writing skills has already been researched. Research suggests that WhatsApp text messaging interactions can contribute to EFL students’ writing skills because of their collaborative and interactive features (Khurram et al., 2024; Tanashur et al., 2024).

Virtual Learning Environments (VLE)

Virtual Learning Environments, or Learning Management Systems (LMS), are online platforms that manage and distribute educational materials, track student progress, and help students and teachers establish and maintain communication. Examples of VLEs are Moodle, WebCT, Google Classroom, Blackboard, and Eminus. Among the advantages of VLEs are the possibility that students can upload their written work, write posts in forums, and receive feedback from their peers and/or teacher.

The Internet as a source of language advice and materials

Thanks to computers, writing is no longer constrained by linear development. Now drafting, editing, and revising can be done simultaneously. Learners can experiment with different forms of expression and organization. Also, it can be easier to avoid language mistakes and change formatting. Word processors allow readers to produce fast and non-linear drafting; brainstorming and time-focused freewriting can help students develop writing fluency. Besides, word processors facilitate editing by allowing for the jumbling and rearranging of texts.

The use of corpora

A corpus is a digital collection of texts, often containing millions of words, taken from naturally occurring language, representing a particular domain or area. Corpora provide evidence of authentic language and use, allowing teachers and students to explore authentic language examples. Corpora are a source of rich, authentic data. Teachers can use corpora to examine language structure, identify patterns, and analyze writing variations to help learners develop more effective and accurate writing skills, based on the real use of the language.

Some Digital Resources and Tools for Writing

Digital tools for writing can be classified according to their purpose and the stage at which they can be implemented. They are provided on-

line with various information, examples, and interfaces that can help learners develop and improve their writing. In this section, the purposes and stages taken into consideration to help learners and teachers develop writing are research and prewriting, drafting and revising, editing and proofreading, using Artificial Intelligence.

Research and prewriting.

These tools provide learners and teachers with information that can be analyzed and processed in a written fashion. Topic selection, brainstorming, and outlining are necessary to plan the structure and the content of what will be communicated through text (Wallett, 2022). The different sources within the following web tools follow standards in terms of styles and norms, so they can be considered reliable sources to obtain information that may be organized and structured into a target text. Some of these online research and prewriting tools for writing are:

»» Google Scholar:

Created by Anurag Acharya in 2004, Google Scholar is a free web search engine that gives access to different sources for academic purposes. It works with a database of indexed scholarly literature in different formats across various disciplines, such as specialized websites, PDFs, and eBooks. Some materials found with this tool include technical reports, abstracts, theses, dissertations, books, and academic journals.

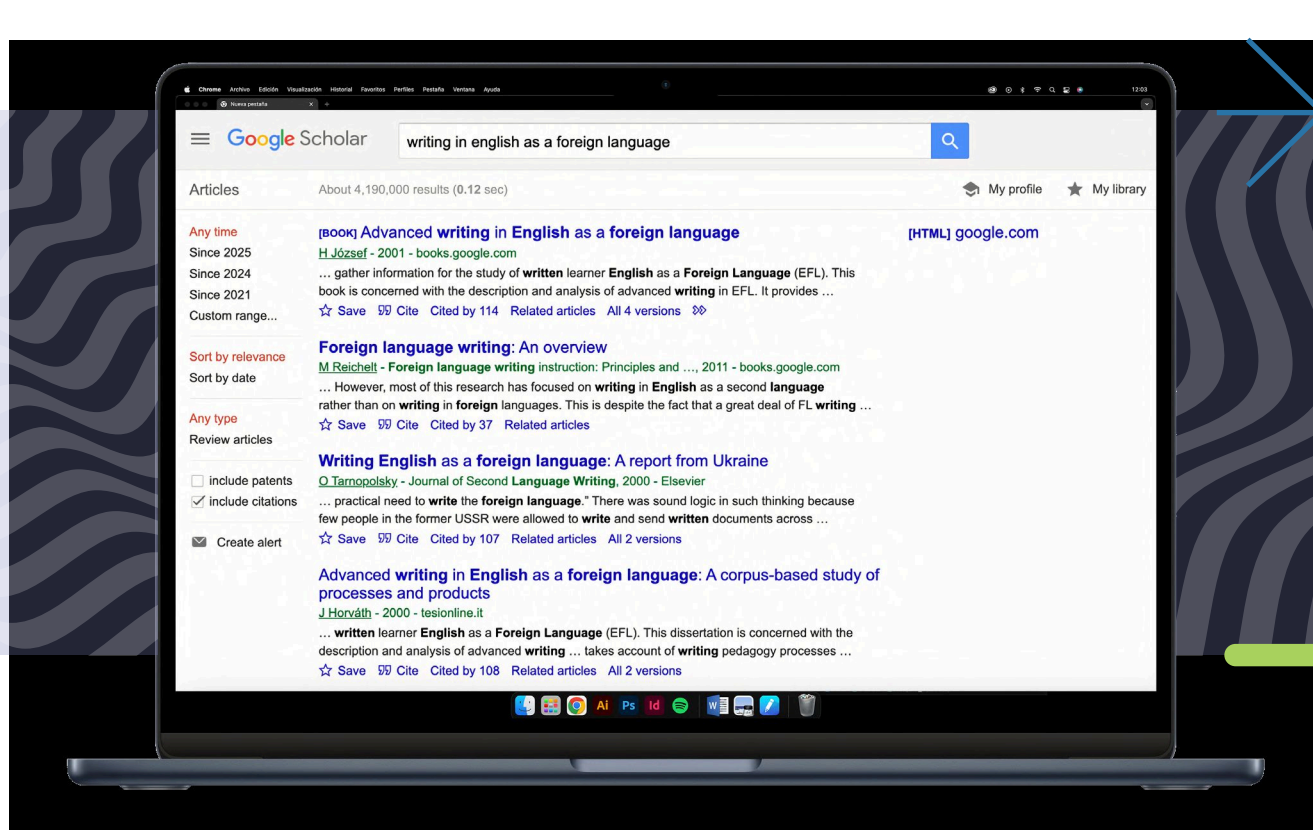


Figure 3.3 — Google Scholar topic search example

» Zotero:

Created by the Center for History and New Media at George Mason University in 2006, Zotero is a free and open-source reference tool that helps organize bibliographic data and research materials. It can be used online via a browser and on word processors, such as LibreOffice Writer, Microsoft Word, and Google Docs. Its extension on web browsers and integration with text editors can help generate in-text citations, footnotes, and bibliographies that may need to be easily manipulated by the writer.

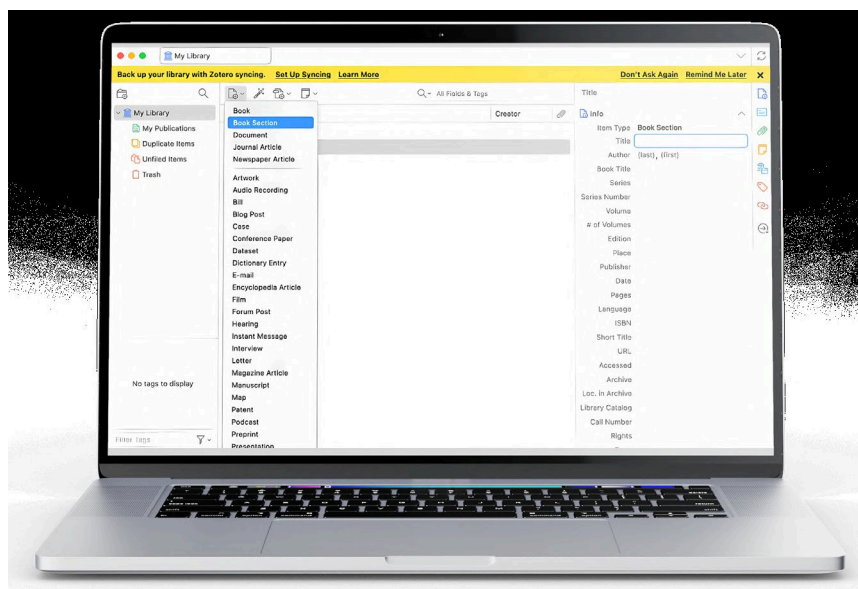


Figure 3.4 — Screenshot of Zotero software interface to save different kinds of research sources

Drafting and revising writing

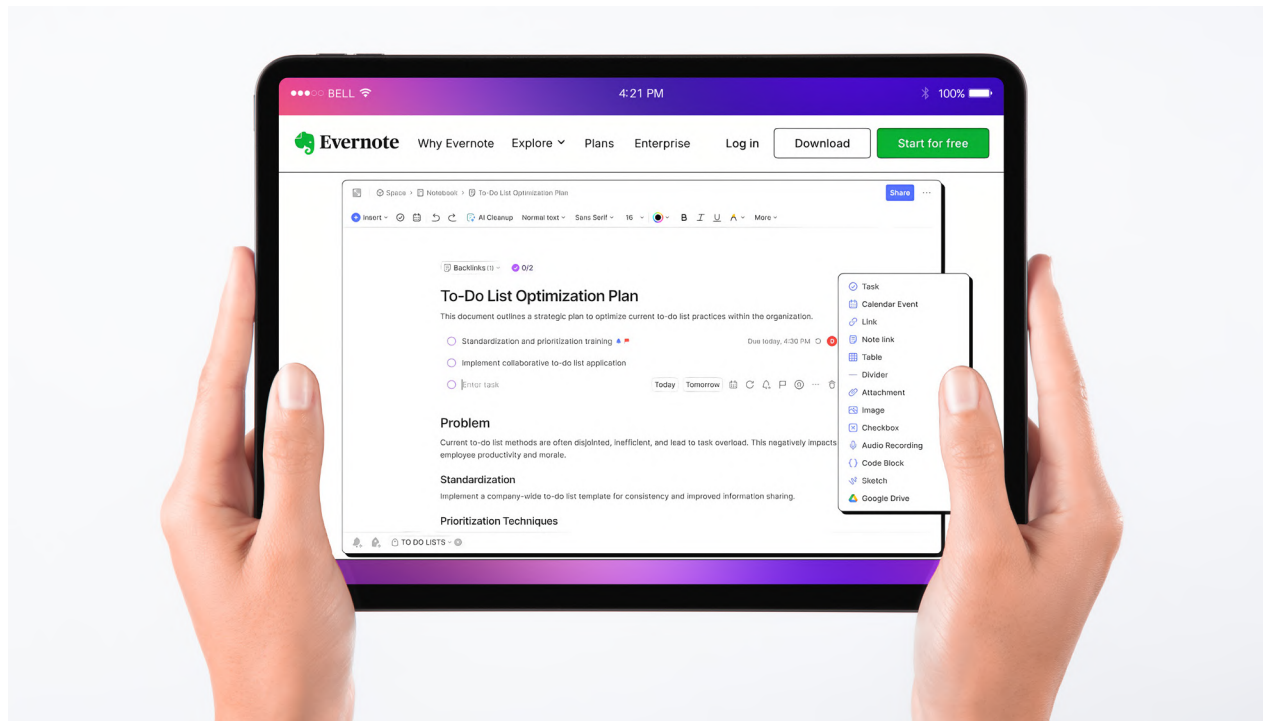
Drafting and revising are two of the main steps in the writing process. Other steps or stages in this process are editing, proofreading, and publishing; these tools for these three stages will be provided in the next section. According to Rolling (2016), “drafting is usually a process of discovering an idea or argument,” while “revision involves bringing the strongest ideas to the front of the [text], reordering the main points, and cutting irrelevant sections”. Drafting and revising help ensure the creation of a piece of writing that is well organized and that may be well received by the target audience (Walleit, 2022). It is important to include that these stages require minimal distractors, so their design needs to be adequate to not distract the writer in their pursuit of generating ideas and revising them. Some writing tools for drafting and revising are:

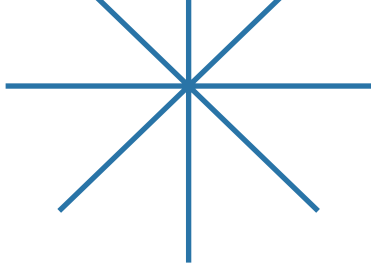
» Evernote:

Developed by Stepan Pachikov in 2008, this tool is a note-taking app that allows users to work with basic text format, annotations, embedded photos, screenshot taking, to-do lists, team collaboration, web page creation, and other features (Laurinavicius, 2024). Evernote can be used on mobile platforms like iOS, Android, and Windows Phone.

Figure 3.5

5 Screenshot of Evernote editing tools



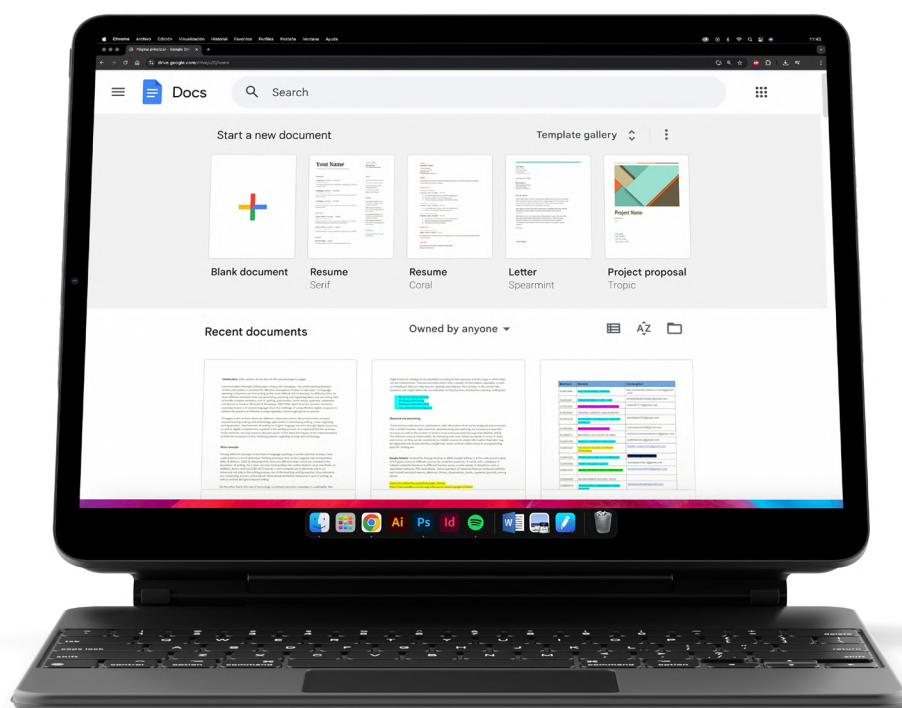


» Google Docs:

Released by Google in 2006, this free web-based word processor has the capability of importing, creating, editing, and storing documents online. Google Docs belongs to a cloud-based productivity platform that includes Google Sheets, Google Slides, Google Drawings, Google Forms, Google Sites, and Google Keep. It can be used online and with apps that work on mobile devices with Android, Chrome, or iOS. The documents edited through this tool can be manipulated collaboratively, allowing users to revise the last version of the file being modified in real time (Hanna, 2022). This online writing tool includes features similar to those of Microsoft Word.

Figure 3.6

Google Docs starting page



Editing and proofreading

While drafting and revising help to initiate part of the writing process, editing and proofreading are the next stages. Their importance relies on making the writing easily understood through effective style and correctness (Lythgoe, 2024). According to the University Writing & Speaking Center (n.d.), “editing [...] has to do more with revising the logistics of the paper than grammar and surface-level errors,” while “proofreading takes place when editing is finished [focusing] on surface-level errors like misspelling and grammar errors”. Bearing this into consideration, the following examples of digital tools for writing regarding editing and proofreading are provided:

»» Microsoft Word Editor:

Developed by Microsoft in 2016 initially as a spelling and grammar checker, Microsoft Word Editor is a closed-source artificial intelligence-powered writing assistant available for MS Word, which has the capability of helping to produce formal, casual, and professional writing style formats (Quisitive, 2023). The free version helps users correct their spelling and basic and advanced grammar. The paid version can be used to refine the writing. The paid version includes revising and refining written production regarding clarity, conciseness, formality, inclusiveness, perspectives, punctuation conventions, sensitive geopolitical references, and vocabulary. The platforms and browsers compatible with Microsoft Word Editor are Windows, Microsoft Edge, Google Chrome, and Brave.

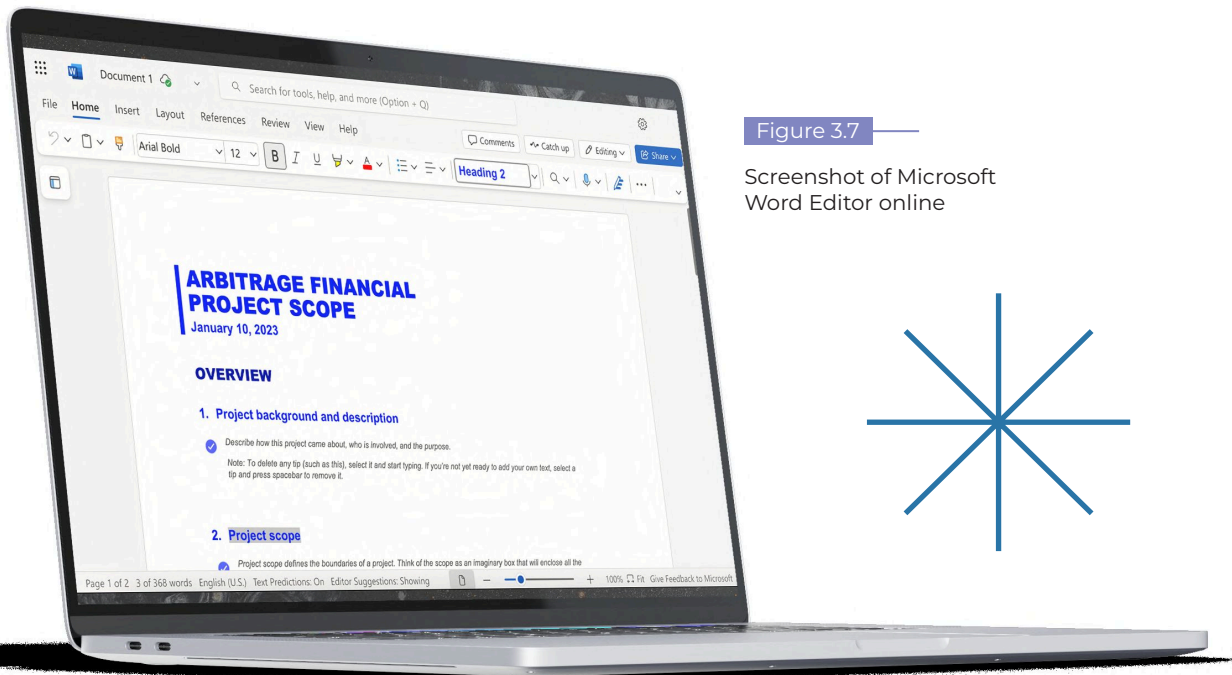
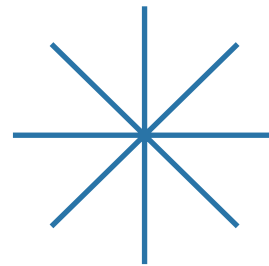


Figure 3.7

Screenshot of Microsoft Word Editor online



»» OneLook Thesaurus:

Founded in 1996, OneLook is an online website that serves as a thesaurus and definition provider. Its engine provides more than just synonyms and antonyms, allowing users to identify examples of contexts in which a specific piece of vocabulary, word, or phrase can be used. Lythgoe (2024) states that “writers can use OneLook’s sorting feature to find simple alternatives for complex words”.

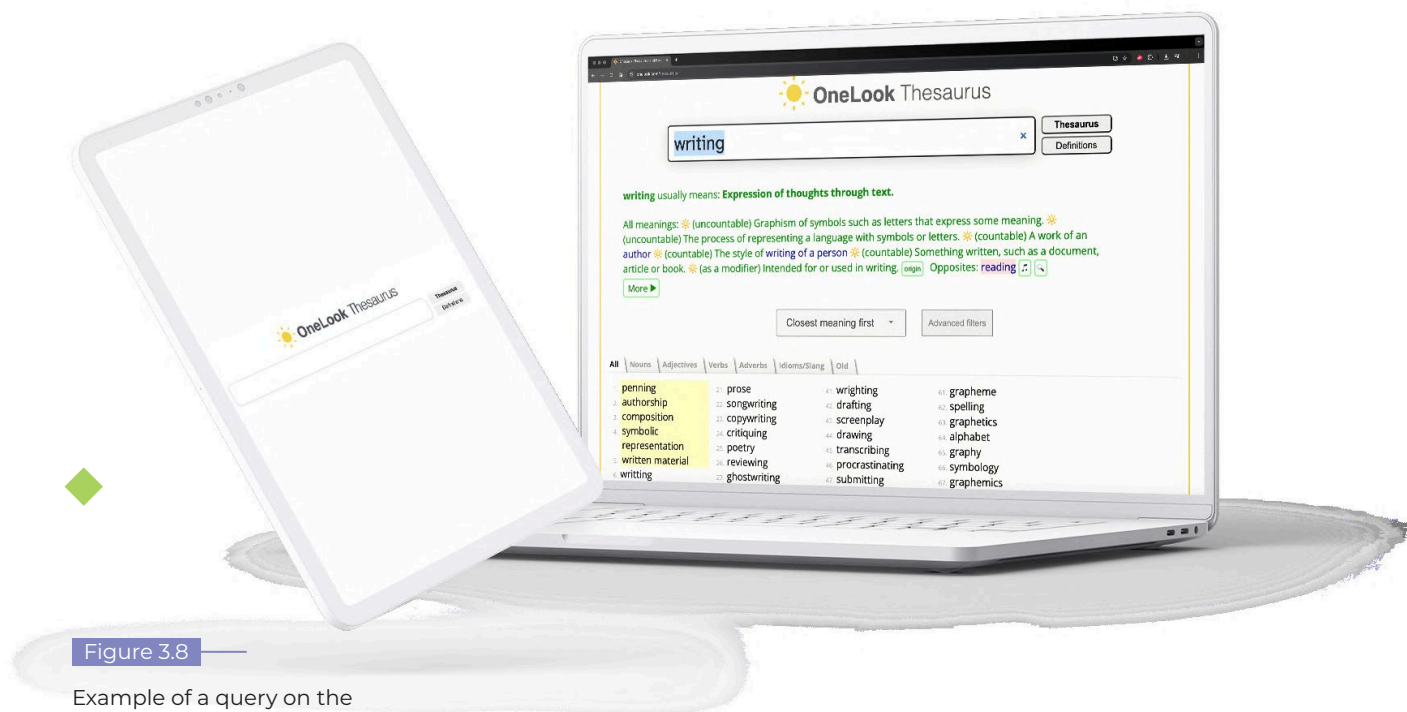


Figure 3.8

Example of a query on the OneLook Thesaurus website

Use of Artificial Intelligence

Writing in a foreign language can be a challenge. Thanks to writing digital tools, EFL and ESL learners can develop their writing at a faster pace, providing them with grammar corrections, synonyms, and antonyms. Apart from digital tools for writing, there is also the use of Artificial Intelligence (AI) powered tools, which can help learners and teachers develop and enhance their writing with various options and styles that they can choose to improve their writing during the process (Zhao, 2022). This section provides three AI writing tools that learners and teachers can use.

» Wordtune:

Developed by AI21 Labs in 2020, Wordtune is an AI tool that enables reading and writing analysis. This tool understands context and meaning while performing proofreading. It can also suggest paraphrases, grammar corrections, and the new written contextual text generation. It can be used on desktop computers and mobile devices. It is important to add that “Wordtune is not designed to be a complete AI writer that will create entire pieces of content for [users]. Instead, the tool is designed to make writing an easier, faster, and more effective process” (Kotze, 2024). This digital tool can be used for free and in Plus, Unlimited, and Business plans.

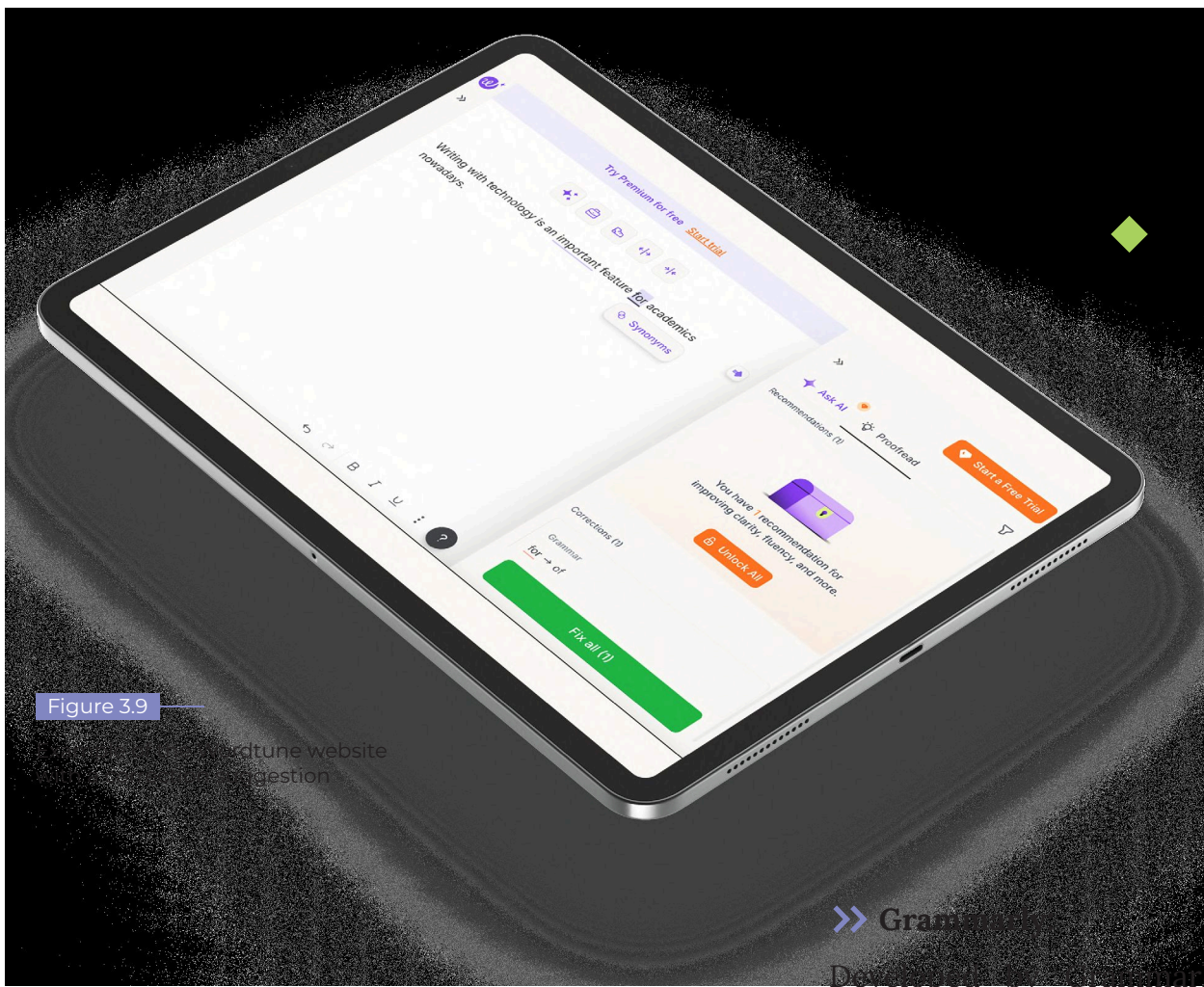


Figure 3.9

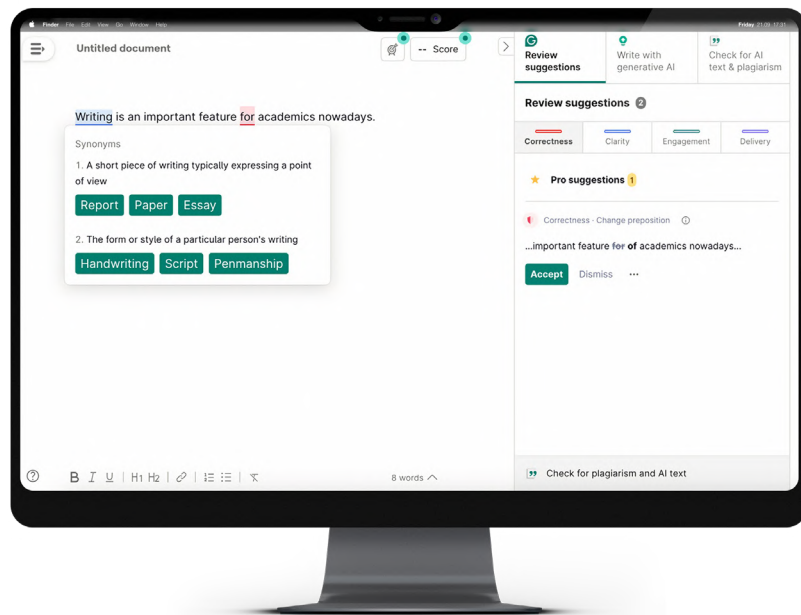


Figure 3.10

Example of the Grammarly website with corrections and synonyms suggestions

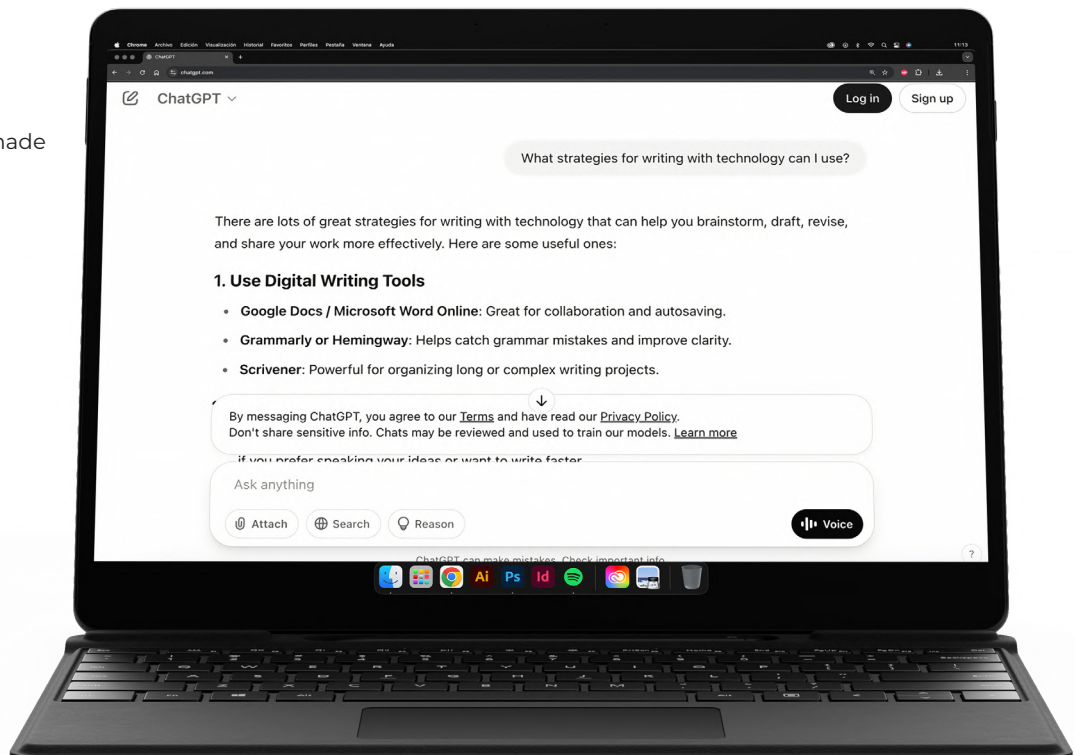
Inc. in 2009, Grammarly is an online AI writing assistant. It is available in two versions: free and premium. The free version allows for text review regarding grammar, punctuation, and text generation. In contrast, the premium version provides the free version tools plus more features such as tone of writing, vocabulary enhancement, fluency, and prevention of accidental plagiarism (Froment, 2024). This online AI tool is used worldwide by professionals and students who need to improve their writing production in editing and proofreading. It is compatible with Google Chrome, Safari, Firefox, and Microsoft Edge.

» ChatGPT:

Developed by OpenAI in 2022, ChatGPT is a chatbot that imitates the interaction of a person to produce different kinds of text. Its name stands for Chat Generative Pre-trained Transformer. Some of the main functions include increased efficiency by reduction of time and effort to produce written texts; idea generation through topic, themes and perspective suggestions; language translation with high grammar accuracy; accurate and consistent content due to its vast access to information from the web; and improved collaboration allowing the participation from other classmates and educators to improve the users' writing regarding grammar, syntax, and spelling errors (Imran & Almusharraf, 2023).

Figure 3.11

Example of a query made in ChatGPT online



Strategies to teach writing using digital resources and tools

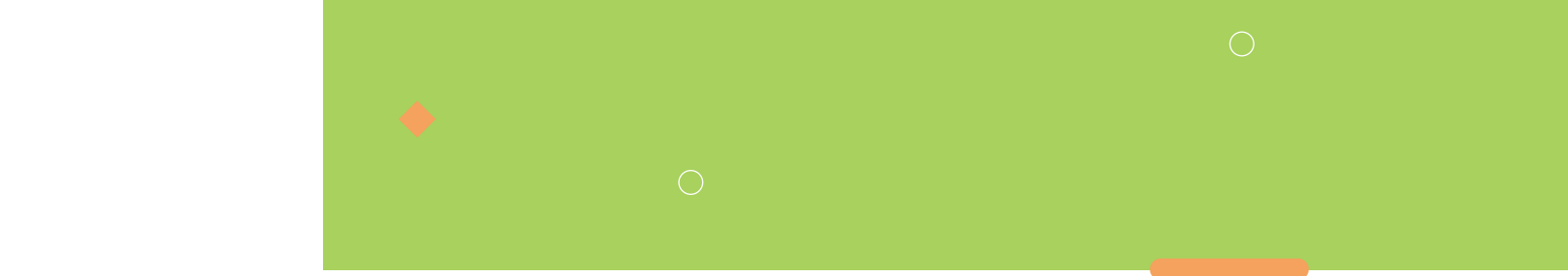
For writing as a process

As discussed above, writing is a non-linear process, with stages mainly prewriting, drafting, revising, and editing. At the prewriting stage, teachers and learners can use various resources, such as Google search, to find topics and information. A generative AI app can also generate initial ideas and topics.

Then, for drafting and revision, learners can use Evernote (to take notes), Google Docs (to upload their first drafts and receive feedback and revision), and word processors (which have the advantage of allowing writers to produce non-linear writing). It is important to make learners aware that they do not have to be accurate from the beginning and can rewrite their texts more than once. Teachers can ask students to correct texts, put sentences in order, or add information to texts given in a word processor. also

Word processors are also an excellent tool for editing texts because they allow writers to reorganize parts of the text, combine, delete, add, and make corrections. Moreover, word processors use predictive text (text suggestions) to help writers write faster and more accurately. They also have a grammar checker. However, the writer is the one who has to decide to accept the suggestions or not, based on the register and type of text. Other useful tools for editing are Grammarly, Microsoft Word Editor, and OneLook Thesaurus.

Feedback is part of the revision stage and is a collaborative task. Students can upload their texts to Google Docs to receive asynchronous feedback from the teacher and their partners. For the feedback to be as clear, simple and objective as possible, a list of criteria needs to be used by those giving feedback. Positive comments and recommended corrections can increase the writer's confidence. Feedback can also be given synchronously; writers can project their texts on the screen, and teachers and peers can provide feedback in class, with respectful and encouraging comments. Besides, having writing tasks where students individually or in teams write their texts on the computer or an electronic device can allow teachers to provide students with individual attention and scaffolding.



For writing using different genres

A genre approach can enable students to write effective texts for particular audiences. Students can learn to write a variety of genres, such as narratives, opinion essays, resumes, recipes, or advertisements. A valuable tool regarding genres is the word processor. Microsoft Word Editor online has templates for resumes, invoices, papers and reports, fliers, meeting notes, letters, or minutes.

Also, to search for genres, teachers can use the Google search engine by entering the specific genre name they are looking for. Teachers can collect genre samples and make students analyze a couple of texts and identify their sections and features. Teachers can find examples of authentic texts belonging to a specific genre and adapt them to the level of students. An additional help can be a generative AI, which can adapt the text to the student's level, or create texts from a specific genre.

For creative writing

Creative writing involves writing as personal expression, sharing thoughts, feelings, and experiences. For creative writing, reading a text is a prerequisite. The Google search engine and a generative AI can provide learners with texts in English about a specific topic or a topic of interest. Evernote can also be a valuable tool for students to take notes about their thoughts on the text they read. However, as creative writing is personal, all the ideas come from the writer himself or herself. There are also some online journals, such as Penzu (penzu.com) or Journey.cloud (<https://journey.cloud>), a free journal and diary app, where you can upload videos and audio. Facebook and Instagram posts can also involve creating writing, although writers need to be careful not to post very personal issues.



For collaborative writing

A wiki is a web page on which users write collaboratively; they can add, delete, or modify content. There is a variety of educational wikis. Some free open-source wikis, which are easy for teachers who are new to wikis, are:

- Tikiwiki: <http://tikiwiki.org>
- Mediawiki: www.mediawiki.org/wiki/MediaWiki
- Bookstack: www.bookstackapp.com
- Pb works: www.pbworks.com/education.html
- Weebly: <https://education.weebly.com>

Teachers can also find 81 wikis that can be used in writing classes in Wikimatrix: www.wikimatrix.org/

Some common classroom uses of wikis are mini-research projects, collaborative summaries about course readings, movie or book reviews, collaborative stories or biographies, and a class discussion and debate area. (Hyland 2022, pp. 221-225).

[Another helpful resource is the blog, an online journal or website where a person or a group posts about a specific topic. Blogs can be personal, professional or academic. Blogs involve multiuser publishing, with short posts on current topics. Learner blogs give students the freedom to write about any topic. Blogs enable learners to write and share their texts beyond the teacher and the classroom. Some blogging websites are blogspot.com, blogger.com, and Wordpress.com.

Another collaborative tool is Google Docs, where users collaborate on documents online. Students and teachers can upload texts, edited or enriched by other users, in real-time or offline. It is a good way to construct a text together and receive feedback.

Another collaborative tool is the forum, which can take place on a VLE platform, a Facebook group, or even a WhatsApp group. The teacher can make an initial post on a topic discussed in class, and students respond to it and respond to each other's posts. The topics can go from a personal presentation in ESL to a class discussion.

For content-oriented writing and specific topics

Teachers can search for various texts from the internet and edit them to make them easier or adapt them to the level of the students as input, so learners can read different texts about the same topic, summarize them, and comment on them. Google search engine can be used to find texts about the same topic, and a generative AI can also provide texts adapted to students' levels. In classrooms where mobile phones are allowed, students can be asked to search for information about a specific topic, such as the environment, recent news, or a famous person, discuss their findings, and write about it individually or in groups.

For academic writing

Regarding academic writing, the same tools discussed in the section on writing as a process can be used. However, the Google Scholar search engine might be more appropriate given the formality level in academic writing. Zotero is also an excellent tool for helping people in the academy collect, organize, annotate, cite, and share research texts and/ or research. Teachers must become familiar with the tool and train students to save bibliographic information and documents and generate bibliographies.

Another helpful resource mentioned before is online writing labs (OWLs). The Purdue University OWL (<https://owl.purdue.edu/>) provides various free resources for writers at different levels. The sections include general writing, academic writing, research and citation styles, and interactive exercises to practice writing. It is an excellent resource for teachers and students of academic writing.

For writing accuracy, structure, and functions:

Students can work on language structures and vocabulary using a variety of websites with grammar, vocabulary, and sentence construction exercises, such as Grammarly (<https://www.grammarly.com/>), Write and Improve with Cambridge (<https://www.cambridgeenglish.org/learning-english/free-resources/write-and-improve/>), and Scribbr Grammar Checker (<https://www.scribbr.com/grammar-checker/>). Teachers can explore websites and assign exercises or train students to use them autonomously. The website ThoughtCo has Sentence Transformation Exercises for ESL students (<https://www.thoughtco.com/advanced-level-sentence-transformations-1209969>). The website "English Grammar. Online Exercises and downloadable worksheets" has a variety of grammar and vocabulary exercises, including key word transformation exercises: <https://www.english-grammar.at/index.htm>.

Alternatively, teachers can also learn about how to use a corpus and train students to use corpora, which are available online; they can be beneficial in situations where a language question arises, such as how to use a word based on real examples, or which preposition to use with a specific verb. An example of an online corpus is SKELL – Sketch Engine, which has examples, collocations, and a thesaurus for learners of English; it is free and easy to use (<https://www.sketchengine.eu/skell/>). Another available (with some restrictions) online corpus is the Corpus of Contemporary American English (COCA) at <https://www.english-corpora.org/coca/>, where users can see how frequent and recent a word is, and how a word collocates with another word. Different corpora and their availability can be checked in <https://www.english-corpora.org/>

List of Resources



The following is a list of resources and tools discussed in this paper.

Prewriting, drafting, revising, and editing

- Google search engine
- Google Scholar search engine
- Zotero
- Evernote
- Google Docs
- Microsoft Word Editor
- OneLook Thesaurus

Artificial Intelligence (AI)

- Wordtune
- ChatGPT

Journal Writing websites

- penzu (penzu.com)
- journey.cloud (<https://journey.cloud>)

Blogging websites

- Blogger (www.blogger.com)
- blogspot.com (<https://es.linkedin.com/company/blogspot>)
- Wordpress.com

Wikis

- Tikiwiki: <http://tikiwiki.org>
- Mediawiki: www.mediawiki.org/wiki/MediaWiki
- Bookstack: www.bookstackapp.com
- Pb works: www.pbworks.com/education.html
- Weebly: <https://education.weebly.com>
- Wikimatrix: www.wikimatrix.org/

Writing accuracy

- Scribbr Grammar Checker (<https://www.scribbr.com/grammar-checker/>).
- Grammarly (<https://www.grammarly.com/>)
- English Grammar (<https://www.english-grammar.at/index.htm>)
- ThoughtCo (<https://www.thoughtco.com/advanced-level-sentence-transformations-1209969>)

Academic writing

The Purdue University OWL (<https://owl.purdue.edu/>)

Corpora

- SKELL – Sketch Engine (<https://www.sketchengine.eu/skell/>).
- Corpus of Contemporary American English (COCA) at <https://www.english-corpora.org/coca/>,
- English corpora <https://www.english-corpora.org/>



Conclusion

In conclusion, the integration of digital resources and tools into the teaching of writing can enhance the language learning experience very significantly. Digital technologies have already impacted how we write and the kinds of text we write. Therefore, we need to take that as an opportunity to improve the writing skills of our students in this new era. Teachers need to know more about the nature of writing and the approaches to writing so that they can select the elements of each approach that are more useful and appropriate to their context and needs. Also, they need to become familiar with the array of digital resources and tools available nowadays and select the most appropriate. This paper aimed to provide them with that information and make them think about the appropriacy and usefulness of contemporary digital aids. However, it is necessary to emphasize that technology is not a method; it is merely a tool. Depending on how we use it and for what purpose, it will be positive or negative for education and our society.

References

- Froment, L. (2024, February 17). *Grammarly Review: Why It's the Best Writing Tool for Freelancers*. Location Rebel. <https://www.locationrebel.com/grammarly-review/>
- Hanna, K. T. (2022, September 19). *Google Docs*. WhatIs. <https://www.techtarget.com/whatis/definition/Google-Docs>
- Harmer, J. (2015) *The Practice of English Language Teaching*. Harlow: Pearson
- Hyland, K. (2019) *Second Language Writing*. 2nd edition. Cambridge: Cambridge University Press.
- Hyland, K. (2022) *Teaching and Researching Writing*. 4th edition. New York: Routledge.
- Imran, M., & Almusharraf, N. (2023). Analyzing the role of ChatGPT as a writing assistant at higher education level: A systematic review of the literature. *Contemporary Educational Technology*, 15(4), ep464. <https://doi.org/10.30935/cedtech/13605>
- Khurram, S., Palpanadan, S.T. & Chachar, Z.A. (2024) Analyzing the contribution of

WhatsApp in enhancing English writing skills among undergraduate English as a Foreign Language (EFL) learners: A systematic review. *Forum for Linguistic Studies* 6(2), 1174. <https://doi.org/10.59400/fls.v6i2.1174>

Kotze, T. (2024, May 9). *Wordtune: A Comprehensive Review*. Contentellect. <https://www.contentellect.com/wordtune-review/>

Laurinavicius, T. (2025, March 21). 14 Writing Tools to 10x Your Writing in 2025 (Free & Paid). Best Writing. <https://bestwriting.com/blog/writing-tools/>

Loman, J.L (2024) *Implementing Technology Enhanced Writing Pedagogy* [Unpublished master's thesis]. Universidad Veracruzana.

Lythgoe, T. (2024, March 3). *Digital tools for effective and efficient writing*. From the Green Notebook. <https://fromthegreennotebook.com/2024/02/26/digital-tools-for-effective-and-efficient-writing/>

Nation, I.S.P. & Macalister, J. (2021). *Teaching EFL/ESL Reading and Writing*. 2nd edition. London & New York: Routledge.

Quin, J. & Stapleton, P. (2023). *Technology in Second Language Writing. Advances in Composing, Translation, Writing Pedagogy and Data-Driven Learning*. New York: Routledge.

Quisitive. (2024, May 2). Microsoft Editor: What is it and how does it work? Quisitive. <https://quisitive.com/microsoft-editor-what-is-it-and-how-does-it-work/>

Richards, J.C. (2015) *Key Issues in Language Teaching* (Chapter 15). Cambridge: Cambridge University Press.

Rolling, J. (2016, October) *How to revise drafts*. University of Minnesota Crookston. <https://crk.umn.edu/writing-center/how-revise-drafts>

Sokolik, M. (2003) *Writing*. In D. Nunan (ed.) *Practical English Language Teaching*. McGraw-Hill Education.

Stockwell, G. (2016) *Mobile Language Learning*. In F. Farr & L. Murray (eds.) *The Routledge Handbook of Language Learning and Technology*. London & New York: Routledge.

Tanashur, P., Aprianto, D., Sutarman & Rahmawati, L. (2024). The Use of WhatsApp in English Writing Activities: A Correlational Study of WhatsApp Use and Writing Performance. *SALEE: Study of Applied Linguistics and English Education*. 5(2). 447-464. <https://doi.org/10.35961/salee.v5i2.1369>

Thain, C. (2023) *Teaching and Developing Writing Skills*. Cambridge: Cambridge University Press.

University Writing & Speaking Center (n.d.). *Editing & Proofreading Techniques*. University of Nevada, Reno. <https://www.unr.edu/writing-speaking-center/writing-speaking-resources/editing-and-proofreading-techniques>

Wallett, H. (2022, December 28). *What are the five steps in the writing process?* Cascadia Author Services. <https://cascadiaauthorservices.com/what-are-the-five-steps-in-the-writing-process/>

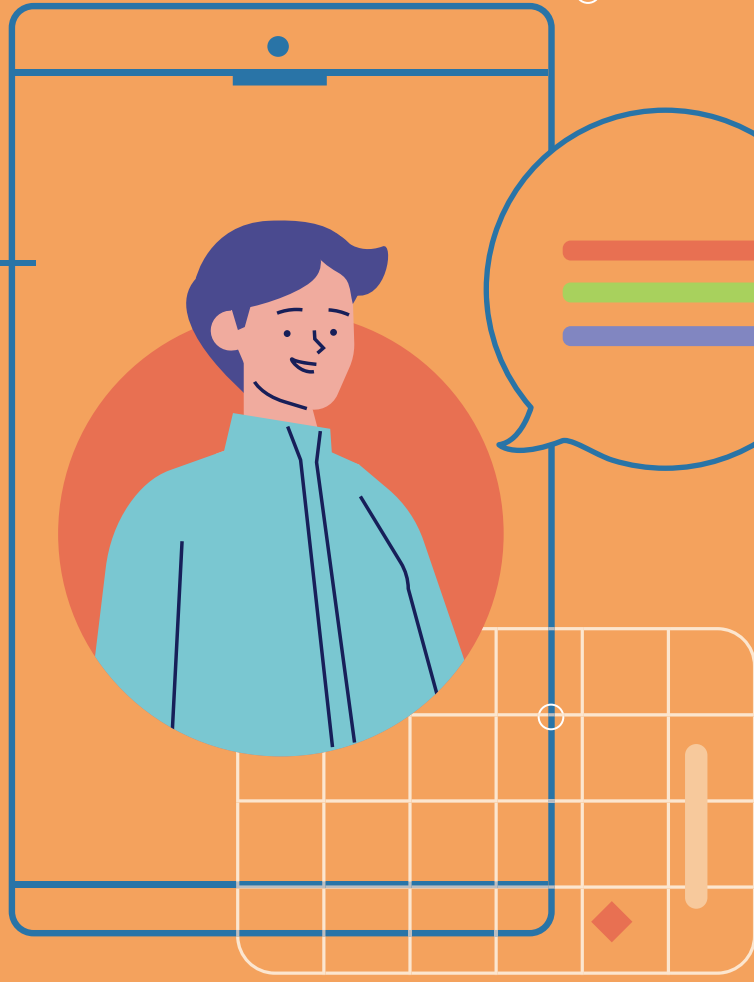
Weigle, S.C. (2014) *Considerations for Teaching Second Language Writing*. In M. Celce-Murcia, D.M. Brinton & M.A. Snow (eds.) *Teaching English as a Second or Foreign Language*. Heinle-CENGAGE Learning.

Wen, X. & Walters, S.M. (2022). The Impact of Technology on Students' Writing Performances in Elementary Classrooms: A Meta-Analysis. *Computers and Education Open*, 3, 1-14. <https://doi.org/10.1016/j.caeo.2022.100082>

Zhao, X. (2022). Leveraging Artificial intelligence (AI) technology for English Writing: Introducing Wordtune as a Digital writing assistant for EFL writers. *RELC Journal*, 54(3), 890-894. <https://doi.org/10.1177/00336882221094089>

CHAPTER

IV



Developing Speaking with digital tools and resources

Abiel Gerardo Santos Hernández

Introduction

Speaking skills are the most important aspect of learning a second or foreign language. It is a means through which learners can communicate with others to achieve specific goals and express their opinions, viewpoints, hopes, and intentions. Therefore, speaking is considered the prime goal of language learning and the most fundamental skill to attain (Aleksandrak, 2011)

Its importance relies on interaction and communication among others to satisfy our needs. Spoken language leads to the satisfaction of human needs. Maslow (1943) proposes a hierarchy of needs, some of which are physiological, safety, love and belonging, esteem, and self-actualization.

One of the main goals of spoken interaction is satisfying the needs of the affective side of the human being. Speaking satisfies the needs of safety, love-belonging, esteem, and self-actualization. Therefore, spoken language leads to satisfying the human hierarchy of needs.

Different researchers in language learning have suggested different definitions of the word “speaking.” Speaking is saying words orally, communicating by talking, making a request, and making a speech (Nunan, 1995). Speaking can also be defined as an ability we develop naturally since childhood.

In a traditional view, speaking is how human beings communicate orally. According to Harmer (2007), human communication is a complex process. Speakers need communication when they want to say something and transmit information. Additionally, speakers apply

language according to their own goals. Thus, speakers should be both listeners and speakers at the same time for effective communication. Moreover, Brown (2014) defines speaking as dialogues that learners understand from the foreign language culture, which can be interpersonal and transactional.

The Oxford Learner's Dictionary (2020) defines speaking as "the action of conveying information or expressing one's feelings in speech or the activity of delivering speeches.

Speakers need communication when they want to say something and transmit information. Additionally, speakers apply language according to their own goals. Thus, speakers should be both listeners and speakers at the same time to have effective communication. According to CEFR (2001), one of the main approaches that deals with developing speaking skills is the action-oriented approach. The European Text, prepared by the Common European Framework of Reference, was created in the context of suggestions to learners and teachers accepting an action-oriented approach to make language learning/teaching more efficient. This approach generally focuses on speaking skills and views users and learners of a language primarily as social agents. It seems that developing speaking skills is the most important aspect of learning a second or foreign language. It is a means through which learners can communicate with others to achieve specific goals and express their opinions, viewpoints, hopes, and intentions.

Therefore, speaking is considered the prime goal of language learning and the most fundamental skill to attain (Aleksan-

drzak, 2012). Its importance relies on interaction and communication, among other things, to satisfy the hierarchy of human needs.

Speaking satisfies the needs of safety, love-belonging, esteem, and self-actualization. What is more, being able to speak in a foreign language also implies a high dose of elements belonging to the affective domain. Teaching speaking in English as a Foreign Language is a fundamental part of a course.

The action-based approach also considers cognitive, emotional, and volitional resources and the full range of specific abilities the individual must use as a social agent.

One of the main goals of teaching speaking by an action-oriented approach is to develop students' speaking skills by applying communication strategies and engaging in the negotiation of meaning in each set of circumstances, in a specific environment, and within a particular field of action. (Richards, 2015)

Unfortunately, there are plenty of problems related to speaking skills. The following section contains some of the most challenging issues regarding speaking skills.

It is known that learning a foreign language depends on students' attitudes towards it. According to Tsiplakides (2010), learning a foreign language implies high levels of motivation and low levels of anxiety. Therefore, anxiety and motivation in learning a foreign language can be regarded as two factors with a strong relationship. This fact has been confirmed by numerous empirical studies, which show that motivation has a direct effect on

anxiety and second language achievement. Liu's (2009, in Liu, 2012) study of 547 Chinese university students revealed that the more anxious students tended to be, the less motivated they were to learn English. It also supported a similar finding in Liu and Hao (2012, Ibid).

Both studies revealed that the more a student worries about the English language class, the worse s/he performs in English. On the other hand, the more intrinsically and integratively motivated s/he was and/or interested in foreign languages and cultures, the better s/he performed in English. It can be concluded that foreign language anxiety and learning motivation are related to students' English performance (Liu, 2012).

For that reason, one of the main problems that students have with speaking skills is foreign language anxiety.

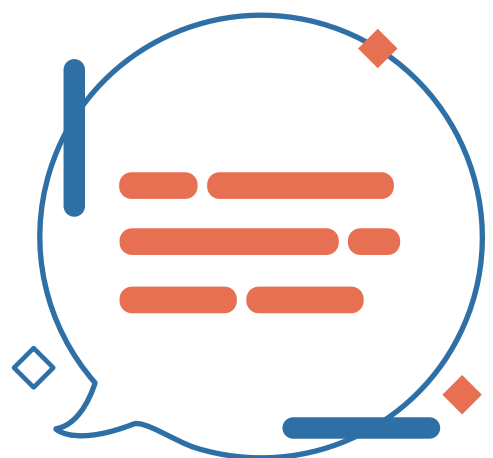
Foreign Language Anxiety (FLA) is a linguistic phenomenon characterized by a subjective feeling of tension, apprehension, nervousness, adverse emotional reaction, and worry associated with an arousal of the automatic nervous system when learning a second language (McIntyre, 1999; McIntyre & Gardner 1994, in Lucas, 2011). FLA has a determinant role in the development of speaking language skills.

According to Horwitz et al. (1986) and MacIntyre and Gardner, (1989, 1991) in Brown (1994), research on Foreign Language Anxiety (FLA) have identified three components or kinds of language anxiety: communication apprehension (CA), Fear of negative evaluation (FNE) and Test Anxiety (TestAx).

Communication apprehension

Communication Apprehension is defined as shyness arising from learners' inability to express mature thoughts and ideas when communicating with people adequately (Horwitz et al., 1986; MacIntyre, 1989; Gardner, 1991; in Brown, 1994). The two main characteristics of Communication Apprehension are fear and anxiety in communicating with people. Difficulties in speaking in public, listening, or learning a spoken utterance are all manifestations of communication apprehension.

This type of anxiety in learning a second language is derived from the learners' fear of inadequate proficiency in the language, combined with fear of difficulty understanding others and expressing themselves. Learners with communication apprehension prefer to keep silent in their English classes and are reticent about speaking (Lucas, 2011; Young 1999, in Jones, 2004).



Fear of Negative Evaluation

Fear of Negative Evaluation is another factor that causes language anxiety. “This factor comprises students’ fear of appearing awkward, foolish or incompetent in the eyes of learners’ peers and teachers, teachers’ methods of evaluation and classroom activities, and a fear of losing face” (Zarate, 2017). It is encompassed in the necessity of a learner to make a positive social impression on others and avoid evaluations and evaluative situations. At the same time, students fear appearing incompetent, making mistakes, and not knowing what to say. It also refers to a sense of foolishness of one’s ideas compared with those of others, and a fear of a low standard of English, which inhibits their attempts to communicate confidently. Therefore, whenever such a threat arises, learners prefer to remain silent or avoid communication (Young 1999; Lai 1994, in Jones, 2004).

Test Anxiety

Test anxiety is an unpleasant feeling or emotional state that “has physiological and behavioral concomitants, and that is experienced in formal testing or other evaluative situations” (Zarate, 2017). The leading cause of this kind of anxiety is the fear of failing a test. As a result, losing self-confidence, feeling inferior to others, and other psychological stress may impact students’ motivation, affecting learning (Cabukcu, 2007; Ohata, 2005), as referred to in (Lucas, 2011). Those sources of foreign language anxiety can significantly impact students’ performance, abilities, and confidence. They can also be translated into students’ difficulty expressing themselves and their views. Additionally, students may tend to underestimate their speaking abilities. As a result, most students may not accurately develop their speaking abilities.

Different authors gave us some advice on improving our speaking skills. The mix of learning strategies and ICT might positively impact the students’ learning process and improve their English language learning and speaking skills. Different authors have defined language learning strategies in plenty of ways. However, the fact that language learning strategies have been defined from various perspectives also introduces numerous problems in consolidating them.

O’Malley and Chamot (1990) referred to strategies based on information-processing theories of cognition, thereby approaching the concept from a cognitive perspective. Oxford (1990a, p. 20) also defined strategies as “specific actions, behaviors, steps, or techniques taken by the learner, used often consciously, which embrace both the behavioral and mental steps.”

Language learning strategies play a leading role when learning a foreign language. According to Hedge (2000, p. 18), the success of “successful language learners is most of the time for the well use of language learning strategies”.

Using language learning strategies might promote learner autonomy and self-direction by allowing students to choose their strategies spontaneously.

At the same time, using ICT to improve speaking skills is another path to improving language skills. First of all, ICT needs to be defined.

According to Shalini Jayanthi & Vijay Kumar (2016), ICT includes any communication device such as television, cameras, iPods, web 2.0 (social networking sites, blogs, wikis, video sharing sites, hosted services, Web applications, and so forth). USBs, computers, laptops, tablets, CD players, applications, Internet, TV, projectors, smartphones, satellite systems, etc.

Learning with technology has become essential in today's schools. Worldwide, governments, education systems, researchers, school leaders, teachers, and parents generally consider that they should play a key role in education.

Nowadays, researchers are interested in knowing the impact of technology in the educational field. They want to know the effectiveness of technology in the learning process of a second language. For instance, they want to develop more valuable and relevant material to achieve an educational goal. Nevertheless, educational material cannot always reach its main objective because of insufficient information or school equipment. That is why knowing how it works and its potential in the classroom is important. Thus, the effectiveness of technology depends on the result it gives after having been used (Zhao, 2003)

Technology can be brought to and adapted in the classroom in several ways, including audiovisual media such as au-

dio, television, films, and video. In other words, ICT can be used in the language classroom, supported by conventional or unconventional tools like overhead projectors or computers (Salaberry, 2001).

Additionally, about the previous definition, we must highlight that the role of information and communication technologies (ICT) and their impact on every aspect of our daily lives are indisputable. ICT has changed our everyday lives and relationships, causing people to react to new challenges and ways of communication. ICT dramatically altering the way people communicate with each other. It is said that recent technology has changed our world and provoked a change in basic assumptions in education (Noni, Jefri & Nasrullah, 2017).

Several studies have shown that using ICT to improve speaking skills is useful.

In 2019, Santos, Guevara, and Martinez conducted a study about implementing ICT for learning English. Some results show that 85% of students use ICT to improve their language skills. Additionally, 59% of the students liked using ICT to improve their language skills. The main language skills that students developed were listening and speaking. The study showed that pronunciation, vocabulary, and grammar were also skills and areas that students developed.

In 2021, Santos conducted a study about using socio-affective strategies to reduce the use of foreign languages in university students. This study was developed during the lockdown during the 2019 pandemic. A workshop was held online using an online video call (Zoom), and some activities were uploaded to an educational platform.

Some of the main results were that students reduced their foreign language anxiety by implementing socio-affective strategies. At the same time, the implementation of ICT played a crucial role. Using Zoom helped to develop their speaking skills and increase their confidence when speaking.

Both studies revealed that using ICT also promotes the development of speaking skills and plays a significant role in developing confidence.

For those reasons, as teachers, we must adapt and bring different kinds of ICT and electronic tools to develop speaking skills. Also, using ICT makes an innovative, creative, and faster way to develop such language skills.

In a related study carried out by Becerra Polanco, Collí Novelo, Valdez Hernández, and Hernández Gonzalez (2013), they discovered how students are practicing their language skills with technological tools and the students' beliefs about the use of ICT language learning, because they may have an impact on their performance in class. Their research participants were focused on two campuses with majors in English Language, Cozumel and Chetumal. In Cozumel, only 80 students were registered, while in Chetumal, almost two hundred. They used the quantitative method due to the objective of their research and only made use of the tables and numbers as their data collection instrument.

The results of their study indicated that most EFL teachers at the University of Quintana Roo do not motivate or encourage students with online activities. It means that teachers must adopt ICT as a resource to improve and develop language skills in their students' learning. They

also mentioned that: "ICT is not the key to change the educational system in Mexico, but it is a good alternative to improve the learning process and to project the knowledge outside the classroom" (p. 211). What could be seen from the results is that many challenges affect the integration of technology into language learning.

For that reason, digital resources are so important in the student's learning process because they also integrate lifelong learning. First, the Internet's abundant learning resources provide tremendous teaching resources. We can easily find text information, pictures, and audio data on almost any topic we like. Powerful tools, such as Google, Baidu, and other search engines, can provide us with tremendous information on any subject. It is very convenient, and most of this information can be obtained free of charge. Part of the content has been turned into multimedia courseware. Learning becomes very convenient and enjoyable.

Second, easy access to information. Nowadays, we can immediately get the learning resources we need at low cost or even free from the Internet. We can find relevant information online when we hear the news about a person or event. If students are interested in any topic, they can immediately find the relevant information for learning and discussion.

Many university students now have cell phones. Texts, images, and sounds can be stored on their mobile phones. Students can read English articles and hear their voices. Such easy access to information creates a small environment for them to learn English. Digital resources allow students to learn English anywhere, anytime, easily, faster, and innovatively.

As teachers, we need to develop some digital competencies. First, we need to define digital competence. According to Rizza (2014), Digital competence is a term by which a human can use Information technology in a specific context. On the other hand, Greifenberg (2020) states: “Digital competencies are describing a set of skills, which are necessary to use digital devices and tools with an adequate degree of self-determination.” Moreover, Ferrari et al. (2012) define digital Competence as:

[...] the set of knowledge, skills, attitudes, abilities, strategies, and awareness that is required when using ICT and digital media to perform tasks; solve problems; communicate; manage information; behave ethically and responsibly; collaborate; create and share content and knowledge for work, leisure, participation, learning, socializing, empowerment, and consumerism (p.84)

One more time, it is possible to see that digital competencies strongly impact professional and personal ways. Nowadays, it is almost mandatory to know these skills for several actions that we do in our daily lives, like ordering food delivery, paying bills, taking classes, and going to work.

Additionally, Lomäki et al. (2011) allege that: “Digital competence is grounded on basic skills in ICT, for instance, the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet” (p.2).

For all the previous definitions, digital competencies can be defined as a group of skills and abilities that people must learn or acquire to develop and live in society and its current times, such as banking, working, and developing speaking skills with the use of ICT, These competencies are required for the daily life and the learning and teaching practice.

At the same time, we need to consider the importance of digital competencies for teachers to promote and enhance as a lifelong learning process.

According to the Recommendation of Bilbao et al. (2014), “digital competence involves the confident and critical use of Information Society Technology (IST) for work, leisure and communication” (p. 1); such activities embark not only on daily-life matters of the modern area but professional and academic subjects as well. Such as the use of laptops, computers, or even cell phones in the most common areas that students and teachers use every single day,

That is the main reason for bringing technology to our classrooms and the learning process. Gladović et al. (2020) state that integrating new technologies affects all aspects of higher education, including admissions, finance for teachers, and learners. The modern era is pushing people to use current technologies and adapt to most techno-

logical advances currently within people's reach. It is not enough nowadays to use apps and electronic devices like computers, cell phones, iPads, and tablets that evolve so fast, to know how to use Email and Microsoft Office anymore. Students and teachers must overcome most of these advances that are more than relevant for their purposes.

During the COVID-19 pandemic in 2019, ZOOM was one of the most popular applications, and it was used in 2020, but before that, Skype was at the top. Darmawansah & Ismanianti (2018) affirmed that even while using Skype, teachers must develop their materials to engage with students and their class, and that this situation offers some challenges in designing these digital materials, once again requiring the use and knowledge of technological competence. Furthermore, Autio (2011) postulated that "[...] technological competence was defined as an aggregate of the three aforementioned measurements: knowledge, skill, and emotional engagement" (p. 73), which are joined with the use and even creation of new materials since knowledge and skills are required for such tasks and the emotional engagement as to affirmed, there is a relationship between emotions and psychomotor & cognitive abilities.

On the other hand, some authors, such as Candolfi et al. (2019), define technological competencies as specific performance applied to different professional fields, emphasizing a professional as a set of skills or abilities that are only useful when talking about the enterprise world or business matters.

Guevara et al. (2020) stated that educational virtual environments must be appropriately designed since communi-

cation and interaction are carried out at a distance and at different times through computers, tablets, mobiles, and internet access. Other researchers, Fernández & Fernández (2016), affirmed that the mere existence and presence of technological gadgets do not grant the development of technological competence since using them for basic tasks is not the only way around to acquire this set of skills, and even those authors postulate that the best opportunity to develop the digital competence is through teachers that already are both confident enough and skilled enough to teach and use all of their Technological competences.

The Impact of using digital resources and tools in the English learning process for speaking will also be changed soon. For instance, when adopted in the classroom, the relationship between Classroom Teaching and using digital resources and tools will significantly change the relationship between students and teachers. Many teachers will not accept it very soon. However, those with foresight and a scientific spirit will realize the importance of using digital resources and tools in English teaching and learning.

At the same time, most of the new generation of teachers will be digital natives, and most of the teachers who will be retired will be digital migrants.

Today's students have just changed incrementally from those of the past. We are not discussing their slang, clothes, style, or related issues. We are talking about the new generations of students born surrounded by computers, video games, digital music players, video cams, cell phones, and all the other toys and tools of the digital age. Those students are named

digital natives. On the other hand, a large population was not born with technology. However, it had to adapt to the digital age, and those people created a movement called digital migration. Digital migration has two protagonists: Digital Natives and Digital migrants.

According to Prensky (2001), Individuals between 35 and 55 years old are Digital Migrants. They are unfamiliar with gadgets, computers, iPads, cell phones, etc. Also, Digital Migrants are those who were not born into the digital world but have, at some later point in their lives, become fascinated by and adopted many or most aspects of the new technology that are, and always will be, compared to them.

On the other hand, digital natives are defined as the population that receives information fast. They function best when networked. They like to parallel process and multi-task. They prefer their graphics before their text rather than the opposite. They prefer random access (like hypertext). They thrive on instant gratification and frequent rewards. They prefer games over “serious” work (Prensky 2001).

Recommended Resources to Improve Speaking Skills

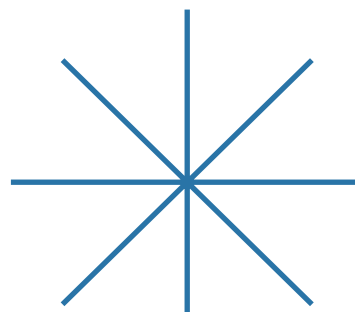
In the digital age, learners have access to a wide array of online platforms and mobile applications designed to enhance their speaking skills in English. These resources support the development of fluency, accuracy, pronunciation, and communicative competence in diverse and engaging ways. Below are some recommended tools and an explanation of how each can be beneficial:



Duolingo

Duolingo is a free, gamified language learning platform that students use worldwide. It provides lessons in bite-sized formats that include vocabulary, sentence construction, listening, and speaking practice. The speaking feature uses speech recognition technology to analyze pronunciation and fluency.

How it helps: Duolingo reduces the affective filter by making learning fun and stress-free. Its immediate feedback system boosts learners' motivation and allows them to monitor their progress over time (Vesselinov & Grego, 2012). Although not focused on extended conversation, it is ideal for beginners who need regular practice to gradually build speaking confidence.



BBC Learning English

BBC Learning English offers various free resources, such as videos, audio programs, pronunciation guides, and vocabulary lessons tailored to real-life situations. Many materials include role-plays and sample dialogues that users can repeat and imitate.

How it helps: Learners benefit from exposure to authentic British English in context, which helps them acquire natural pronunciation, intonation, and vocabulary in everyday communication. The structured lessons also cater to intermediate and advanced learners seeking to refine their oral language skills (BBC Learning English, 2024).

HelloTalk

HelloTalk is a social networking application for language exchange that connects users with native speakers of the language they are learning. It allows text, voice messages, and voice or video calls.

How it helps: By engaging in real conversations with native speakers, learners can practice spontaneous speaking, receive corrections, and understand natural speech patterns. This interaction reduces speaking anxiety and promotes intercultural competence (Zhou & Wei, 2018). The app provides a low-pressure environment where mistakes are seen as part of learning.

ELSA Speak

ELSA Speak (English Language Speech Assistant) is a mobile app powered by artificial intelligence. It offers personalized English pronunciation and fluency training using machine learning algorithms to detect mispronunciations and provide corrective feedback.

How it helps: ELSA is particularly effective for improving intelligibility and accent reduction. It is highly beneficial for learners preparing for oral components of exams like IELTS or TOEFL, where pronunciation and fluency are critical (Nguyen & Derwing, 2021). The structured and progressive lessons adapt to learners' individual levels, making it suitable for both beginners and advanced students.

Speaky / Tandem

Speaky and Tandem are language exchange platforms that allow users to find language partners worldwide. These platforms support real-time interaction via voice calls and video chat and encourage conversational exchanges in a peer-to-peer learning format.

How it helps: These platforms provide an immersive environment where learners can practice real-time speaking with people from different cultures and accents. This builds fluency and listening comprehension and helps learners adapt their language use to various communicative contexts. According to Trinder (2017), informal learning environments promote autonomy and increase exposure to authentic language use.

Students can complement traditional classroom instruction with personalized, flexible, and dynamic speaking practice by integrating these tools into their learning routines. These platforms empower learners to take control of their development and to engage in meaningful communication, which is at the heart of language learning.

References

- Aleksandrak, M. (2012). Problems and challenges in teaching and learning speaking at advanced level. *Glottodidactica an international journal of applied linguistics*, 37, 37-48. <https://core.ac.uk/download/pdf/154439026.pdf>
- Autio, O. (2011). The Development of Technological Competence from Adolescence to Adulthood. *Journal of Technology Education* 22 (2), 71-89 <https://doi.org/10.21061/jte.v22i2.a.5>
- BBC Learning English. (2024). *Learning resources*. Retrieved from <https://www.bbc.co.uk/learningenglish>
- Becerra - Polanco, M., Colli-Novelo, D., Valdez-Hernández, S., and Hernández- Gonzalez, F. (2013). Students' Beliefs About the Use of Technology in Learning English: A Case of a Mexican University. *The Journal of Teaching and Education*, 2(3):199 – 212.
- Bilbao, J., Bravo, E., Varela, C., García, O., Rodríguez, M., González, P. (2014). Promoting Digital Competence From University. *INTED2014 Proceedings. 8th International Technology, Education and Development Conference*, 1914-1919. <https://library.iated.org/view/BILBAO2014PRO>
- Brown, H. D. (2014) *Principles of language learning and teaching*. 6th ed. New York: Person education
- Brown, H.D. (1994). *Principles of Language Learning and Teaching*. USA: Prentice Hall Regents.
- Candolfi, N., Chan, M., & Rodriguez, B. (2019). Technological Competences: A Systematic Review of the Literature in 22 Years of Study. *International Journal of Emerging Technologies in Learning (iJET)*, 14(04), 4–30. <https://doi.org/10.3991/ijet.v14i04.9118>

Common European Framework of Reference for Languages (2001).

Darmawansah, D., & Ismaniati, C. (2018). How Virtual Learning Works for Indonesian EFL Teachers in Teaching Spanish Students: A Case Study in Wonder English Academy of Spain. *LLTC Proceedings 2018 "Issues in Language and Language Teaching"* 23-37. <http://doi.org/24071/lltc.2018.04>

Gladović, P., Deretić, N., & Drašković, D. (2020). Video Conferencing and its Application in Education. *JTTTP - Journal of Traffic And Transport Theory And Practice*, 5(1) 45 – 48. <https://doi.org/10.7251/JT-TTP2001045G>

Greifenberg, J. (2020). An Approach to Engage Multiple Parties into the Process of Teaching Digital Competences in German Schools. *Technology Arts Sciences*. Th Köln -University of Applied Sciences Advanced Media Institute

Guevara, I., Rodríguez, A., Salazar, E. (2020). *Educación, Innovación, tecnología y auto-aprendizaje*. Brujas.

Harmer, J. (2015). *The Practice of English Language Teaching*. (5th ed.) Pearson Education.

Hedge, Tricia. (2000). *Teaching and Learning in language classroom*. Oxford: Oxford University Press.

Jones, J. (2004) *A Cultural Context for Language Anxiety*. *EA JOURNAL*, 21, (2), 30-38. Retrieved from http://www.englishaustralia.com.au/index.cgi?E=hcatfuncs&PT=sl&X=getdoc&Lev1=pub_jnl21_2&Lev2=EAJ_21-2jon [09-10-2011]

Liu, M. & Huang, W. (2012). An Exploration of Foreign Language Anxiety and English Learning Motivation. *Education Research International*, 2011, 1-8. doi:10.1155/2011/493167

Lomäki, L., Kantosalo, A., & Lakkala, M. (2011). What is digital competence? *Education and Information Technologies, Linked portal*. 21(3), 655-679. <http://linked.eun.org/web/guest/in-depth3>

Lucas, R. & Miraflores, E. (2011). *English Language Learning Anxiety among Foreign Language Learners in the Philippines*. *Philippine ESL Journal*, 7. Retrieved from <http://www.philippine-esl-journal.com/V7-A5.pdf> [09-10-2011]

Maslow, A. H. (1943). *A theory of human motivation*. *Psychological Review*, 50(4), 370-396. doi: 10.1037/h0054346.

Nguyen, T., & Derwing, T. (2021). Artificial Intelligence and Second Language Pronunciation: A Review of ELSA Speak. *Computer Assisted Language Learning*, 34(3), 233-250. <https://doi.org/10.1080/09588221.2020.1812575>

Noni, N., Jefri, R. & Nasrullah. (2017). Teachers' preference toward and needs of ICT use in ELT. *Global Journal of Engineering Education*, 19(1), 88 - 92.

Nunan, D. (1995) *Teaching English to Speakers of Other Languages: An Introduction*, Routledge, ProQuest Ebook.

O'Malley, J.M. & Chamot, A.U. (1990). *Learning Strategies in Second Language Acquisition*. Cambridge: Cambridge University Press.

Oxford Learners' Dictionaries. (2020) Retrieved from: https://www.oxfordlearnersdictionaries.com/definition/english/speak_1?q=speaking

Oxford, R. (1990a) *Language learning strategies: what every teacher should know*. New York: Newbury House.

Prensky, M. (2001b), *Digital Natives, Digital Immigrants, II: Do they really think differently?* Retrieved from: <http://www.macprensky.com>

- Richards, J. C. (2015). *Key Issues in Language Teaching* (1st ed.). Cambridge University Press.
- Rizza, C. (2014). Digital Competences. In: Michalos, A. (eds) *Encyclopedia of Quality of Life and Well-Being Research*. Springer, Dordrecht. https://doi.org/10.1007/978-94-007-0753-5_731
- Salaberry, M. R. (2001) The use of technology for second language learning and teaching: a retrospective. *The modern Language Journal* 85. Retrieved from: http://jjan.ucc.nau.edu/~jgc/512/technology_salaberry.pdf
- Santos, A. G. H., & Mejía, E. J. B. Z. (2021). *Socio-affective strategies for reducing foreign language anxiety levels in university students*. EDUCATECONCIENCIA. <https://doi.org/10.58299/edu.v30i37.572>
- Santos, A. G. H., Martinez C, J., & Guevara B, I. A. (2021). *Students' beliefs about the implementation of ICT in learning English*. Recuperado de: <https://docs.google.com/viewerng/viewer?url=https://primary.jwwb.nl/plugin-documents/50b7408ef1a565c9067369f7d3e992ba0dbc25bc.pdf>
- Shalini Jayanthi, N., & Vijay Kumar, R. (2016). Use of ICT in English Language Teaching and Learning. *Journal of English Language and Literature*, 3(2), 34 - 38.
- Trinder, R. (2017). Informal second language learning using mobile technologies: Perceptions, challenges and opportunities. *Computer Assisted Language Learning*, 30(1-2), 159-172. <https://doi.org/10.1080/09588221.2017.1308384>
- Tsiplakides, I. & Keramida, A. (2010). Promoting Positive Attitudes in ESL/EFL Classes, *The Internet TESL Journal*, 16 (1). <http://iteslj.org/Techniques/Tsiplakides-PositiveAttitudes.html>
- Vesselinov, R., & Grego, J. (2012). *Duolingo effectiveness study*. City University of New York. Retrieved from https://static.duolingo.com/s3/DuolingoReport_Final.pdf
- VILCHES, L. (2001): *La Migración Digital*. Barcelona, Gedisa Editorial, 2001
- Zarate, E. (2017). *Factors that cause Foreign Language Anxiety to secondary students*. Lambert Academic Publishing
- Zhao Y. (2003) *Recent Developments in Technology and Language Learning: A Literature Review and Meta -analysis**. Michigan State University. Retrieved from: <http://www.eelthillside.com/sites/default/files/articles/Recent%20Developments%20in%20Technology%20and%20Language%20Learning.pdf>
- Zhou, M., & Wei, M. (2018). Language Learning Through Social Network Sites: A Case Study. *Language Learning & Technology*, 22(2), 103-117. <https://doi.org/10125/44667>

CHAPTER 1



The Use of digital resources and tools for grammar learning

Verónica Rodríguez Luna

Jennifer Monserrat López Rodríguez

Abstract

This chapter examines the role of digital technology in English grammar learning. It highlights how digital tools have transformed grammar learning by providing interactive, autonomous experiences through various platforms and applications. The chapter emphasizes the importance of digital literacy for educators. It explores how technological resources have made grammar instruction more engaging and accessible, moving it from traditional static learning to an interactive learning experience. Additionally, it stresses that grammar is essential for maintaining coherence in language and how digital tools can help learners solve grammar problems.

Introduction

Nowadays, language learners can access various digital tools and platforms to develop English grammar skills. This chapter explores how technology can enhance learners' grammatical fluency. Grammar represents the essential structure that gives language its meaning and coherence. Students can develop stronger grammatical foundations by understanding common grammatical challenges and utilizing digital resources. Through interactive platforms, mobile applications, and online exercises, students can practice and reinforce their understanding differently.

Digital resources have transformed the traditional approach to grammar into a more interactive experience. These tools promote self-paced learning, allowing students to advance at their own pace and develop long-term study habits. In this way, language instruction nowadays requires teachers to adopt digital literacy. Professors must incorporate technological tools in their courses, creating better learning experiences that go beyond the classroom. Grammar education has evolved with digital innovation, so the new resources tend to make grammar more approachable and enjoyable, changing it from an only academic requirement to a more motivating language learning experience.

The concept of Grammar

Grammar differs in scope as some focus only on syntax – how words form phrases, clauses, and sentences. Others are more comprehensive and cover additional linguistic elements, such as:

Morphology: word structure

Word formation: creating new words from basic components.

Phonetics: possible sounds and sound patterns

Phonology: distinctive sounds and patterns

Orthography: standard spelling conventions

Vocabulary: words in a language

Semantics: word and sentence meanings

Pragmatics: contextual interpretation of language (Greenbaum, 1996)

Language has specific patterns that indicate how sentences are constructed, and these patterns are usually called “grammar” by different authors (Ogu, Ahumaraeze & Ujowundu, 2016). Native speakers unconsciously learn these patterns as they grow up using the language. This natural understanding of language structure is part of what linguists refer to as “linguistic competence” – the inherent knowledge a person has about their native tongue (Ogu, Ahumaraeze & Ujowundu, 2016).

Grammar can be understood in multiple ways, each with its own characteristics. Hanganu (2014) has addressed three broad definitions:

1. **Internalized Rule System:** This refers to the unconscious knowledge of language structure that native speakers possess. It is the intuitive ability to form grammatically correct sentences without explicit instruction.
2. **Formal Rule Description:** This approach involves the objective analysis and documentation of language syntax, focusing on how sentences are constructed.
3. **Sociolinguistic Norms:** Also known as “linguistic etiquette,” this definition involves the social aspects of language use, often associated with judgments of “good” or “poor” grammar.

Seeking a more comprehensive understanding, Celce-Murcia and Larsen-Freeman (in Hanganu, 2014) propose a definition that considers language structure and communicative function. They suggest examining grammar at three levels: a) Morphological (word structure), b) Syntactic (sentence structure), and c) Discourse (beyond sentence level). This approach aims to bridge the gap between formal linguistic analysis and practical language use, addressing both grammar’s structural and communicative aspects.

Some approaches to developing Grammar

According to Widodo (2006), there are several approaches to developing grammar, some of which will be described in this section. The first approaches that will be explained are explicit and implicit knowledge.

Explicit and Implicit Knowledge in Language Learning

Explicit knowledge is a conscious understanding of language rules, typically gained through formal instruction. It involves articulating grammatical concepts and is accessed through controlled processing. While learners with explicit knowledge can explain rules, they may struggle to apply them spontaneously in communication. This knowledge type can be taught and enhanced through error correction.

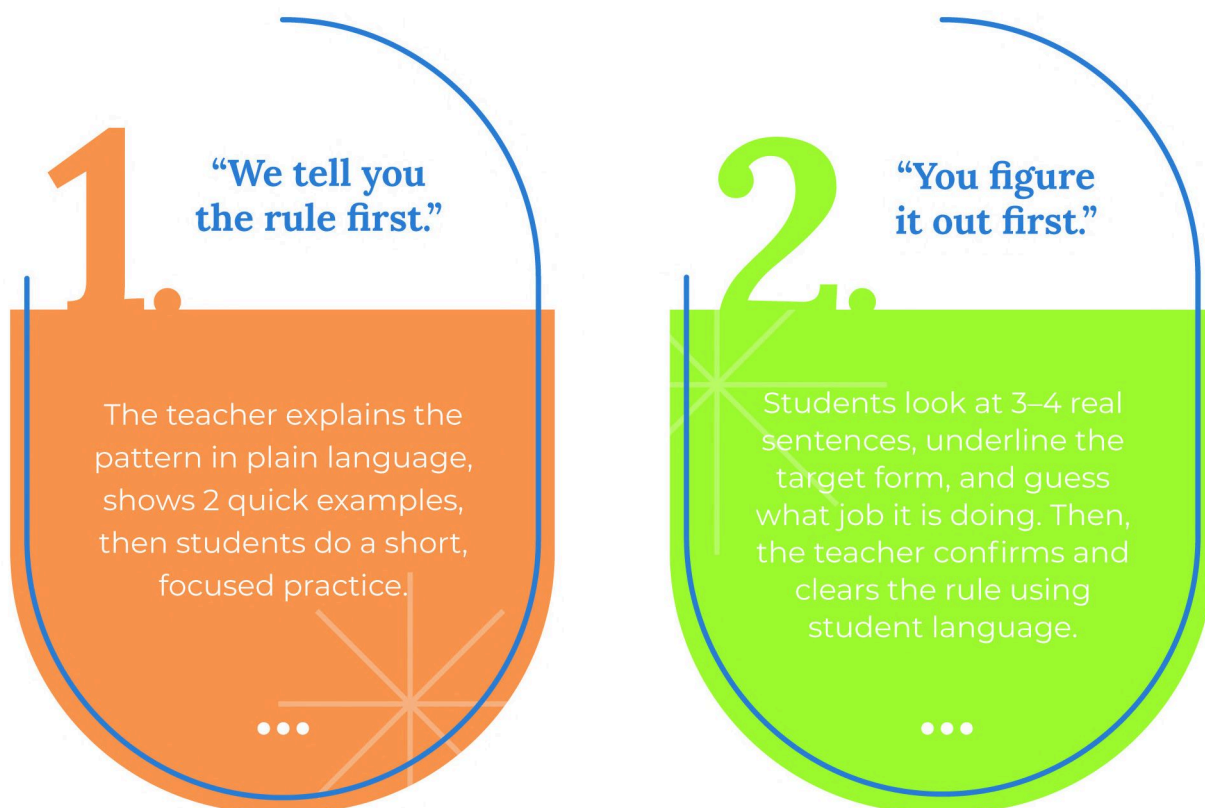
In contrast, implicit knowledge is unconscious, internalized language understanding that is easily accessed during spontaneous communication. It develops naturally, similar to first language acquisition, where learners can use language correctly without necessarily being able to explain the rules. Native speakers often demonstrate implicit knowledge, using language accurately without conscious awareness of grammatical structures.

Other approaches to teaching grammar (Widodo, 2006) include the deductive and inductive approaches. The deductive approach, or rule-driven learning, begins with explicitly presenting grammar rules followed by practice. This method is widely used in language teaching materials. It allows learners to focus on specific language aspects and may reduce anxiety about making mistakes.

The inductive approach, called rule-discovery learning, starts with examples and guides learners to infer grammatical rules. This method encourages active participation and helps develop problem-solving strategies. It aims to implicitly highlight grammar rules, prompting learners to deduce patterns from given examples.

Moreover, according to Ilyosov (2021), grammar instruction has evolved, starting with the traditional grammar translation method and progressing to a communicative language teaching approach. This author also suggests that grammar should be taught as a distinct language component and given equal emphasis as the four main communication skills. Grammar teaching, as Ilyosov 2021 claims, involves instructor language use in the classroom, educational resources, and practical exercises. It aims to help students recognize specific and appropriate language structures. As a result, grammar teaching can be described as methods used to direct students' attention to grammatical elements of language.

Two ways to teach a new grammar form



Examples:

1.

“We tell you the rule first.”

Topic: Present perfect for recent results

Teacher: “We use the present perfect to talk about actions that happened very recently and have an immediate result now.”

“For example:

I have just finished my homework.

She has broken her headphones—they don’t work now.”

“Now, you will do a filling in the blanks exercise so as to practice the Present perfect for recent results.”

2.

“You figure it out first.”

Topic: Present perfect for recent results

Teacher: “Look at these three sentences, and underline the structure of the Present perfect for recent results:”

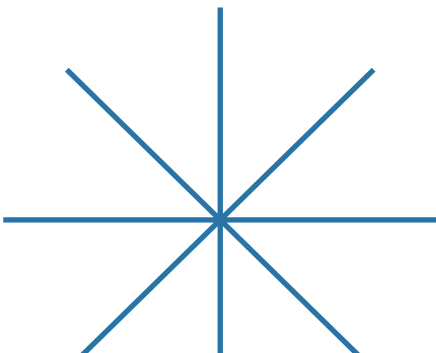
“She has just finished the report, so we can send it now.”

“They have broken the window; that’s why this room is so cold.”

“We have lost the keys, so we cannot open the door.”

Teacher: “Now, guess what job the Present perfect structure is doing.”

Teacher: “The present perfect for recent results is used to show that something happened very recently and we can see the result now.”



The most difficult issues regarding grammar

The traditional approach to teaching grammar through explicit explanations and repetitive exercises is now widely considered ineffective for developing the implicit knowledge of grammar that is considered to be needed for fluent communication. However, there is no agreement on what should replace it. According to Ellis (2006), this leads to several key points about grammar instruction:

1. Grammar teaching should cover form, meaning, and usage of structures.
2. Focus on problematic structures rather than attempting comprehensive coverage.
3. Introduce formal grammar instruction at intermediate levels but provide corrective feedback from the beginning.
4. Form-focused approaches can be valuable if combined with communicative practice.
5. Consider concentrated rather than distributed grammar teaching.
6. Employ both input and output-based teaching methods.
7. Explicit grammatical knowledge can aid in acquiring implicit knowledge.
This can be incorporated into various teaching approaches, potentially using a mix of deductive and inductive methods.
8. An Incidental focus on form allows for extensive treatment of grammar issues.
9. Corrective feedback is crucial and best delivered through implicit and explicit input and output-based methods.
10. Grammar instruction should involve dedicated lessons and integration into communicative activities.

As Ellis (2006) stated, these points are open to debate, reflecting the complexity of second-language grammar acquisition. The key is to understand the available options, their theoretical foundations, and potential issues, forming the basis for a personal teaching philosophy. The controversy around this topic highlights the need for further research on how grammar instruction contributes to implicit knowledge development.

Teaching EFL grammar requires careful consideration of context and potential challenges rather than universally adopting popular methods. Less favored approaches may sometimes be more successful due to fewer implementation issues. It is important

to study specific difficulties teachers and students face, develop solutions, and adapt methods to suit the learning environment.

Research suggests that teachers perceive fully communicative activities, especially written ones, as challenging for students learning grammar and improving accuracy. This implies that professors may be concerned about insufficient focus on form when communicative tasks are used for developing grammatical knowledge. Teacher qualifications appear to influence these perceptions; for example, bachelor's degree teachers express the strongest agreement about the difficulty of improving grammatical accuracy in communicative writing activities, while those with higher qualifications tend to agree less strongly (Almekhlafi & Nagaratnam, 2011).

According to De Gala (2018), students encounter various difficulties in acquiring grammar, such as the following:

Subject-Verb Agreement:

- »» Struggle with implementing subject-verb agreement rules
- »» Unable to correctly identify singular or plural subjects
- »» Insufficient understanding of diverse sentence structures
- »» Difficulty in constructing grammatically correct sentences
- »» Limited grasp of content words

Parts of Speech:

- »» Inadequate comprehension of parts of speech basics
- »» Struggle with proper usage of auxiliary verbs
- »» Limited knowledge of verb tenses (present, past, past participle)
- »» Challenges in forming verbal nouns (gerunds, infinitives, participles)
- »» Difficulty employing transitional verbs and cohesive devices
- »» Inability to use conjunctions effectively

- » Struggle with selecting appropriate prepositions
- » Issues with matching pronouns to their antecedents
- » Inaccurate use of articles
- » Confusion regarding correct preposition usage
- » Challenges in using comparative and superlative adjectives
- » Incorrect use of apostrophes for possession
- » Difficulty distinguishing between “a” and “an”

As a result, teachers must learn how to facilitate the best students’ grammar learning that it is not only through explicit explanations and materials but also through more complex implicit resources that can be printed and/or digital.

Grammar in Four Parts: A template for students

The following template is proposed to help students understand grammatical forms appropriately. The four components approached allow learners to view grammar as a social communicative tool, not only as a set of rules.

Grammar in Four Parts

Form (How it looks):

Meaning (What it helps me say):

Use (When / why would I choose it):

Who expects it? (Who I am talking to):

Example: writing to a professor vs texting a friend

	Writing to a professor	Texting a friend
Form (How it looks)	Could/Would you + base form ...? E.g, Could you send the files to this email adress?	Can you + base form...? E.g, Can you share me the files?
Meaning (What it helps me say)	Requesting something politely.	Requesting something in a direct way.
Use (When / why I'd choose it)	When I want to sound formal, polite or professional.	When the situation is informal and/or I talk to someone close.
Who expects it? (Who I am talking to)	Professors or administrative staff.	Friends or classmates.

How to improve English language learning grammar?

Modern language teaching emphasizes two main approaches to teaching grammar. The first focuses on natural acquisition through real-world situations and communication. This method allows students to absorb grammar rules intuitively while practicing the language in context. Students learn naturally through exposure and usage rather than memorizing rules.

By contrast, The traditional approach focuses on directly explaining grammatical rules. While students taught this way can produce technically correct sentences, they often struggle with natural communication. The key seems to be finding a balance between form and function. Studies indicate that understanding grammar helps language acquisition, but the most effective approach combines both methodologies. The natural acquisition method creates more dynamic classroom interactions than traditional tea-

ching. However, both approaches have merit. Teachers should select methods based on student needs and available resources (Ling, 2015).

In college-level English courses, there is often too much emphasis on memorization and exam preparation. This can make classes ineffective at developing practical language skills. Instead, instructors should balance structured learning with natural acquisition techniques.

Technology can enhance grammar instruction significantly. For example, multimedia tools allow teachers to create immersive learning environments with audio, visual, and interactive elements. This is especially valuable in countries where students have limited exposure to natural English environments. Modern educational technology is transforming traditional classroom dynamics, offering new ways to engage students and effectively demonstrate language concepts (Ling, 2015).

Furthermore, teachers should follow text analysis with hands-on activities where students actively use what they have learned – whether through speeches, group talks, or acting out scenarios. This helps reinforce both grammatical concepts and English thought patterns. Technology generally makes grammar more engaging and motivates students to learn actively. While traditional grammar teaching focuses on language structure and indirect methods emphasize meaning, multimedia tools offer the best of both. They create authentic contexts for college students to learn grammar, allowing them to grasp form and function through collaborative exercises (Ling, 2015).

Nowadays, students, particularly those of the alpha generation, are deeply immersed in digital technology from birth. Technology is not just a tool for them – it is fundamental to their existence and performance. Research indicates that students improve when presented with novel approaches to learning, breaking away from conventional classroom routines. Studies have demonstrated improved grammar test performance when students are actively engaged through innovative teaching methods, as their enthusiasm and dedication to learning intensify with fresh approaches (Hashim, Rafiq, & Yunus, 2019)

Digital resources or tools to improve grammar

In this era, various digital tools are accessible to professors for teaching the English language. These digital tools, according to Bikowski (2018), can be divided into immediate interaction tools (like instant messaging and video calls) and delayed interaction tools (such as forums and email). The distinction between these categories is becoming less clear as new platforms emerge, particularly those designed specifically for education.

Learning technologies have evolved to support student independence, offering resources like digital dictionaries and grammar tools. While these promote learner autonomy, teachers face the challenge of effectively guiding students to use these tools. These technologies enable personalized instruction both during and outside class hours.

Implementing technology in grammar teaching involves several approaches, including simulations, guided tutorials, online discussions, and independent learning tasks. Teachers should consider language, technological capabilities, and learning environment when planning lessons. For instance, they can use online communication to practice grammatical forms or meaning-focused tasks and adapt their approach based on whether they teach new concepts, provide practice, or conduct assessments.

These pedagogical choices are now more complicated as more technological options become available. These options include which type of software or communication technology to use, if desktop or mobile applications should be used, the choice between digital resources provided by a publisher versus activities created by the teacher, and the desired interaction. Specific useful features to consider when planning interaction include timing, feedback, student-help features, and channels of interaction that technology allows. Using technology to build context in a learning environment is another option. It is becoming increasingly feasible with virtual reality, avatars, and gaming advances, such as gesture-free interfaces or virtual reality headsets.

There are also options regarding where to house technology-based activities, such as in a learning management system. Commercial LMSs such as Blackboard can provide structure and stability, while newer LMSs such as Edmodo or 3D GameLab provide more room for creativity. The open-source LMS Moodle combines a traditional look with greater flexibility than many commercial products and includes excellent integration with the activity authoring tool Hot Potatoes. Materials developers and teachers can also create custom-made materials uniquely created for devices, such as e-books and iBooks, or context-specific grammar apps. Whether instruction occurs in a traditional language lab environment with desktop computers or with a BYOT (bring your technology) model also needs to be considered, since many activities can be performed with any Internet-enabled device. For example, student polling tools (Socrative) used for discrete grammar exercises or assessments require less time and less learner training if done on a student's mobile device. Student technology can also be used for telecollaborative projects involving two groups of learners at a distance. Non-native speakers develop their English skills while working with a group of native-English speakers on specific projects, often exploring topics such as culture through literature, videos, or other authentic materials; the form, meaning, and use of grammar are thus explored within the context of pragmatics and politeness (Bikowski, 2018).

Another primary choice Bikowski (2018) proposed is structuring learning within technology-based environments for a

specific group of learners (for example, age, proficiency, learning styles, background, and learning goals). Teachers can choose individual or collaborative tasks, instruction that is in-class or distance-based, instruction that encourages language self-analysis, or instruction that does or does not involve human-human interaction. Effective human-computer interaction is possible through newer technologies that involve natural language processing and intelligent CALL, including grammar checkers and automated writing evaluation. Fee-based automated writing evaluation tools (for example, Grammarly and Criterion) allow learners to check their grammar and organization before submitting it for an assignment or public view. Alternatively, learners can use human-created content for meaningful self-directed learning, such as searching a collection of written texts or corpora (for example, through COBUILD or COCA). Corpora can be native texts or those created by learners. Improvements in speech recognition allow learners to practice their spoken grammar and provide increased accessibility for learners with disabilities. Technology can also assist in grammar instruction in large classrooms or low-resource environments; individualized instruction can be provided through group projects such as collaborative writing in synchronous or asynchronous Web-based environments (for example, Google Docs, PBWorks, or instant chat tools) or with customized feedback. Synchronous CMC projects pairing native and non-native speakers can aid learners in giving and applying feedback. Using technology in low-resource environments continues to be a struggle, though educators can access resources such as digital flashcards or grammar-based games for flip phones and other low-cost devices. Below, there is a proposal of a lesson plan offering a 15-minute routine teachers can run so as to build accuracy, meaning, audience awareness, and confidence without needing a full computer lab.

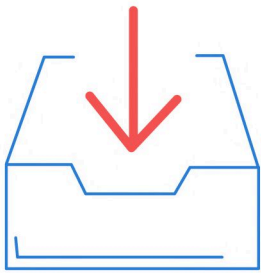
“Notice–Name–Try & Tell”

Target structure: Present Perfect for Recent Results

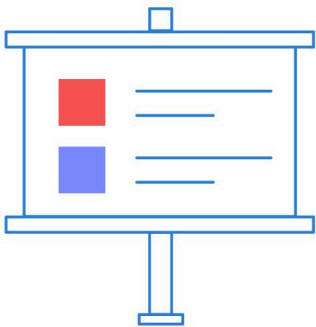
Total time: 15 minutes

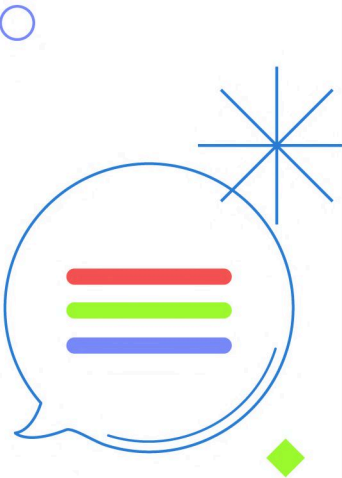
Materials: 3 short messages (WhatsApp, campus email, social post), board/chart paper, student notebooks.

Stage	Notice
Timing	5 minutes
Goal	Students notice the target form in real-world messages.
Procedure	- Teacher shows students three short, authentic-style sentences, for example: - I've just sent the document — check your inbox. - She's gone to her hometown, so she can't join the party. - We've finished the interviews — here are the results. - Students work individually: - They underline the present perfect forms in each sentence. - Brief pair check: - Students compare what they underlined.



Stage	Name
Timing	5 minutes
Goal	Students name the form and meaning in their own words.
Procedure	- In pairs, students complete this phrase: "The form is ____ and we use it to ____." - Pairs create short, simple wording like: "The form is have/has + past participle." "We use it when something happened very recently, and we see the result now." - Teacher selects one pair's version, edits it for clarity (if necessary), and adopts it as the class rule. - Teacher writes the final version on the board for students to keep as a reference.





Stage	Try & Tell
Timing	5 minutes
Goal	Students try using the structure for a real purpose and tell why they used it.
Procedure	- Individually, students write one new sentence using the present perfect for a real communicative purpose, such as: - Asking for help - Advising a classmate - Reporting recent news - Explaining a problem - Here are some examples they might produce: "I've lost the link — can you resend it?" "I've just uploaded the draft to the folder." - Students tell a partner or the teacher: "I used ___ because I want to sound more ___ when ___." For example: "I used 'I've lost' because I want to sound more polite when asking for help." "I used 'I've just uploaded' because I want to sound more natural when talking about actions."

Digital resources for students' learning as lifelong learning

Today, the needs of modern society make the knowledge gained in formal education appear insufficient. Continuous learning and ongoing skill development through adulthood are essential (Puretra, I., 2015). Lakerveld et al. (2012) clearly state that "learning itself is in such a permanent evolution that it requires a permanent re-orientation". It enables more professional and career opportunities for individuals; it allows them to cope with the demands of modern society. When trying to fulfill the demands of this changing world, we encounter the philosophy of lifelong learning.

This term refers to the learning process throughout one's life. It occurs in different contexts and environments. Covering not just the formal learning that we can find in a school or institution, but also non-formal and informal learning that can be found out-

side formal traditional education. It plays a crucial role in overcoming the current challenges experienced in the professional development process. It complements the formal system of education and provides the learner with the knowledge, skills, competencies, and attitudes necessary for personal fulfillment, active citizenship, and employability (Puretra, I., 2015; Laker-vel et al., 2012).

When discussing lifelong learning (LLL), it is impossible to overlook technology's significant role in facilitating access. Lifelong learning is now a reality thanks to individuals' access to technology. The many different devices with access to the internet available in our homes, workplaces, and communities are powerful tools that support LLL (Laal, M., 2013). Many users can easily access different content sources that help improve and develop their skills and construct new knowledge.

The digital resources that can be easily accessed online are an essential element supporting lifelong learning. Today, enrolling in a face-to-face course to develop a skill or learn about a topic is unnecessary; currently, education is not limited to classrooms. Access to any information or content is available on our devices, for example, online courses, educational videos, articles, and interactive digital tools. Therefore, the easy availability of the devices allows us to choose how and when to use them. It gives access to education anytime and anywhere (Waycott, Jones & Scanlon, 2005, as cited in Puretra, I., 2015; Cooker, 2020). Puretra (2015) also states that it is convenient "to make use of the natural benefits of lifelong learning, it is important to devise a practical content that is easily applied in practice." The digital resources that are now accessible to

most people around the world perfectly fulfill this requirement.

A Content Management System (CMS) is a valuable tool for facilitating English grammar teaching and learning. It makes possible the creation, organization, storage, and digital presentation of content, allowing interactions between students, teachers, and instructional materials. This system enables various forms of engagement; student-content interaction is a clear example. In the context of grammar teaching, a CMS can host a wide range of interactive exercises, quizzes, and multimedia resources designed to reinforce grammatical structures and rules. Teachers can upload instructional videos, worksheets, and grammar practice activities that students can access on their devices anytime, promoting autonomous learning in this way.

What digital competencies do teachers need to use in terms of digital resources and tools for grammar? This chapter examines the role of digital technology in English grammar learning. It highlights how digital tools have transformed grammar learning by providing interactive, autonomous experiences through various platforms and applications. The chapter emphasizes the importance of digital literacy for educators. It explores how technological resources have made grammar instruction more engaging and accessible, moving it from traditional static learning to an interactive learning experience. Additionally, it stresses that grammar is essential for maintaining coherence in language and how digital tools can help learners solve grammar problems.

Nowadays, language learners can access various digital tools and platforms to

develop English grammar skills. This chapter explores how technology can enhance learners' grammatical fluency. Grammar represents the essential structure that gives language its meaning and coherence. Students can develop stronger grammatical foundations by understanding common grammatical challenges and utilizing digital resources. Through interactive platforms, mobile applications, and online exercises, students can practice and reinforce their understanding differently.

Digital resources have transformed the traditional approach to grammar into a more interactive experience. These tools promote self-paced learning, allowing students to advance at their own pace and develop long-term study habits. In this way, language instruction nowadays requires teachers to adopt digital literacy. Professors must incorporate technological tools in their courses, creating better learning experiences that go beyond the classroom. Grammar education has evolved with digital innovation, so the new resources make grammar more approachable and enjoyable, changing it from an academic requirement to a more motivating language learning experience.

Grammar differs in scope as some focus only on syntax – how words form phrases, clauses, and sentences. Others are more comprehensive and cover additional linguistic elements such as:

Morphology: word structure

Word formation: creating new words from basic components.

Phonetics: possible sounds and sound patterns

Phonology: distinctive sounds and patterns

Orthography: standard spelling conventions

Vocabulary: words in a language

Semantics: word and sentence meanings

Pragmatics: contextual interpretation of language (Greenbaum, 1996)

Language has specific patterns that indicate how sentences are constructed, and these patterns are usually called “grammar” by different authors (Ogu, Ahumaraeze & Ujowundu, 2016). Native speakers unconsciously learn these patterns as they grow up using the language. This natural understanding of language structure is part of what linguists refer to as “linguistic competence” – the inherent knowledge a person has about their native tongue (Ogu, Ahumaraeze & Ujowundu, 2016).

Grammar can be understood in multiple ways, each with its own characteristics. Hanganu (2014) has addressed three broad definitions:

- 1. Internalized Rule System:** This refers to the unconscious knowledge of language structure that native speakers possess. It is the intuitive ability to form grammatically correct sentences without explicit instruction.
- 2. Formal Rule Description:** This approach involves the objective analysis and documentation of language syntax, focusing on how sentences are constructed.
- 3. Sociolinguistic Norms:** Also known as “linguistic etiquette,” this definition involves the social aspects of language use, often associated with judgments of “good” or “poor” grammar.

Seeking a more comprehensive understanding, Celce-Murcia and Larsen-Freeman (in Hanganu, 2014) propose a definition that considers language structure and communicative function. They suggest examining grammar at three levels: a) Morphological (word structure), b) Syntactic (sentence structure), and c) Discourse (beyond sentence level). This approach aims to bridge the gap between formal linguistic analysis and practical language use, addressing both grammar’s structural and communicative aspects.

According to Widodo (2006), there are several approaches to developing grammar, some of which will be described in this section. The first approaches that will be explained are explicit and implicit knowledge.

Explicit knowledge is a conscious understanding of language rules, typically gained through formal instruction. It involves articulating grammatical concepts and is accessed through controlled processing. While learners with explicit knowledge can explain rules, they may struggle to apply them spontaneously in communication. This knowledge type can be taught and enhanced through error correction.

In contrast, implicit knowledge is unconscious, internalized language understanding that is easily accessed during spontaneous communication. It develops naturally, similar to first language acquisition, where learners can use language correctly without necessarily being able to explain the rules. Native speakers often demonstrate implicit knowledge, using language accurately without conscious awareness of grammatical structures.

Other approaches to teaching grammar (Widodo, 2006) include the deductive and inductive approaches. The deductive approach, or rule-driven learning, begins with explicitly presenting grammar rules followed by practice. This method is widely used in language teaching materials. It allows learners to focus on specific language aspects and may reduce anxiety about making mistakes.

The inductive approach, called rule-discovery learning, starts with examples and guides learners to infer grammatical rules. This method encourages active participation and helps develop problem-solving strategies. It aims to implicitly highlight grammar rules, prompting learners to deduce patterns from given examples.

Moreover, according to Ilyosov (2021), grammar instruction has evolved, starting with the traditional grammar translation method and progressing to a communicative language teaching approach. This author also suggests that grammar should be taught as a distinct language component and given equal emphasis as the four main communication skills. Grammar teaching, as Ilyosov 2021 claims, involves instructor language use in the classroom, educational resources, and practical exercises. It aims to help students recognize specific and appropriate language structures. As a result, grammar teaching can be described as methods used to direct students' attention to grammatical elements of language.

The traditional approach to teaching grammar through explicit explanations and repetitive exercises is now widely considered ineffective for developing the implicit knowledge of grammar that is considered to be needed for fluent communication. However, there is no agreement on what should replace it. According to Ellis (2006), this leads to several key points about grammar instruction:

1. Grammar teaching should cover form, meaning, and usage of structures.
2. Focus on problematic structures rather than attempting comprehensive coverage.
3. Introduce formal grammar instruction at intermediate levels but provide corrective feedback from the beginning.
4. Form-focused approaches can be valuable if combined with communicative practice.
5. Consider concentrated rather than distributed grammar teaching.
6. Employ both input and output-based teaching methods.
7. Explicit grammatical knowledge can aid in acquiring implicit knowledge.
This can be incorporated into various teaching approaches, potentially using a mix of deductive and inductive methods.
8. An Incidental focus on form allows for extensive treatment of grammar issues.
9. Corrective feedback is crucial and best delivered through implicit and explicit input and output-based methods.
10. Grammar instruction should involve dedicated lessons and integration into communicative activities.

As Ellis (2006) stated, these points are open to debate, reflecting the complexity of second-language grammar acquisition. The key is to understand the available options, their theoretical foundations, and potential issues, forming the basis for a personal teaching philosophy. The controversy around this topic highlights the need for further research on how grammar instruction contributes to implicit knowledge development.

Teaching EFL grammar requires careful consideration of context and potential challenges rather than universally adopting popular methods. Less favored approaches may sometimes be more successful due to fewer implementation issues. It is important to study specific difficulties teachers and students face, develop solutions, and adapt methods to suit the learning environment.

Research suggests that teachers perceive fully communicative activities, especially written ones, as challenging for students learning grammar and improving accuracy. This implies that professors may be concerned about insufficient focus on form in communicative tasks for developing grammatical knowledge. Teacher qualifications appear to influence these perceptions; for example, Bachelor's degree teachers express the strongest agreement about the difficulty of improving grammatical accuracy in communicative writing activities, while those with higher qualifications tend to agree less strongly (Almekhlafi & Nagaratnam, 2011).

According to De Gala (2018), students encounter various difficulties in acquiring grammar, such as the following:

Subject-Verb Agreement:

- »» Struggle with implementing subject-verb agreement rules
- »» Unable to correctly identify singular or plural subjects
- »» Insufficient understanding of diverse sentence structures
- »» Difficulty in constructing grammatically correct sentences
- »» Limited grasp of content words

Parts of Speech:

- » Inadequate comprehension of parts of speech basics
- » Struggle with proper usage of auxiliary verbs
- » Limited knowledge of verb tenses (present, past, past participle)
- » Challenges in forming verbal nouns (gerunds, infinitives, participles)
- » Difficulty employing transitional verbs and cohesive devices
- » Inability to use conjunctions effectively
- » Struggle with selecting appropriate prepositions
- » Issues with matching pronouns to their antecedents
- » Inaccurate use of articles
- » Confusion regarding correct preposition usage
- » Challenges in using comparative and superlative adjectives
- » Incorrect use of apostrophes for possession
- » Difficulty distinguishing between “a” and “an”

As a result, teachers must learn how to facilitate the best students’ grammar learning that it is not only through explicit explanations and materials but also through more complex implicit resources that can be printed and/or digital.

Modern language teaching emphasizes two main approaches to teaching grammar. The first focuses on natural acquisition through real-world situations and communication. This method allows students to absorb grammar rules intuitively while practicing the language in context. Students learn naturally through exposure and usage rather than memorizing rules.

By contrast, The traditional approach focuses on directly explaining grammatical rules. While students taught this way can produce technically correct sentences, they often struggle with natural communication. The key seems to be finding a balance between form and function. Studies indicate that understanding grammar helps language acquisition, but the most effective approach combines both methodologies. The natural acquisition method creates more dynamic classroom interactions than traditional

teaching. However, both approaches have merit. Teachers should select methods based on student needs and available resources (Ling, 2015).

In college-level English courses, there is often too much emphasis on memorization and exam preparation. This can make classes ineffective at developing practical language skills. Instead, instructors should balance structured learning with natural acquisition techniques.

Technology can enhance grammar instruction significantly. For example, multimedia tools allow teachers to create immersive learning environments with audio, visual, and interactive elements. This is especially valuable in countries where students have limited exposure to natural English environments. Modern educational technology is transforming traditional classroom dynamics, offering new ways to engage students and effectively demonstrate language concepts (Ling, 2015).

Furthermore, teachers should follow text analysis with hands-on activities where students actively use what they have learned - whether through speeches, group talks, or acting out scenarios. This helps reinforce both grammatical concepts and English thought patterns. Technology generally makes grammar more engaging and motivates students to learn actively. While traditional grammar teaching focuses on language structure and indirect methods emphasize meaning, multimedia tools offer the best of both. They create authentic contexts for college students to learn grammar, allowing them to grasp form and function through collaborative exercises (Ling, 2015).

Nowadays, students, particularly those of the alpha generation, are deeply

immersed in digital technology from birth. Technology is not just a tool for them - it is fundamental to their existence and performance. Research indicates that students improve when presented with novel approaches to learning, breaking away from conventional classroom routines. Studies have demonstrated improved grammar test performance when students are actively engaged through innovative teaching methods, as their enthusiasm and dedication to learning intensify with fresh approaches (Hashim, Rafiq, & Yunus, 2019).

In this era, various digital tools are accessible to professors for teaching the English language. These digital tools, according to Bikowski (2018), can be divided into immediate interaction tools (like instant messaging and video calls) and delayed interaction tools (such as forums and email). The distinction between these categories is becoming less clear as new platforms emerge, particularly those designed specifically for education.

Learning technologies have evolved to support student independence, offering resources like digital dictionaries and grammar tools. While these promote learner autonomy, teachers face the challenge of effectively guiding students to use these tools. These technologies enable personalized instruction both during and outside class hours.

Implementing technology in grammar teaching involves several approaches, including simulations, guided tutorials, online discussions, and independent learning tasks. Teachers should consider language, technological capabilities, and learning environment when planning lessons. For instance, they can use online communica-

tion to practice grammatical forms or meaning-focused tasks and adapt their approach based on whether they teach new concepts, provide practice, or conduct assessments.

These pedagogical choices are now more complicated as more technological options become available. These options include which type of software or communication technology to use, if desktop or mobile applications should be used, the choice between digital resources provided by a publisher versus activities created by the teacher, and the desired interaction. Specific useful features to consider when planning interaction include timing, feedback, student-help features, and channels of interaction that technology allows. Using technology to build context in a learning environment is another option and is becoming increasingly feasible with advances in virtual reality, avatars, and gaming, such as gesture-free interfaces or virtual reality headsets.

There are also options regarding where to house technology-based activities, such as in a learning management system. Commercial LMSs such as Blackboard can provide structure and stability, while newer LMSs such as Edmodo or 3D GameLab provide more room for creativity. The open-source LMS Moodle combines a traditional look with greater flexibility than many commercial products and includes excellent integration with the activity authoring tool Hot Potatoes. Materials developers and teachers can also create custom-made materials uniquely created for devices, such as e-books and iBooks, or context-specific grammar apps. Whether instruction occurs in a traditional language lab environment with desktop computers or with a BYOT (bring your technology) model also needs to be considered, since many activities can be performed with any Internet-enabled device. For example, student polling tools (Socrative) used for discrete grammar exercises or assessments require less time and less learner training if done on a student's mobile device. Student technology can also be used for telecollaborative projects involving two groups of learners at a distance. Non-native speakers develop their English skills while working with a group of native-English speakers on specific projects, often exploring topics such as culture through literature, videos, or other authentic materials; the form, meaning, and use of grammar are thus explored within the context of pragmatics and politeness (Bikowski, 2018).

Another primary choice Bikowski (2018) proposed is structuring learning within technology-based environments for a specific group of learners (for example, age, proficiency, learning styles, background, and learning goals). Teachers can choose individual or collaborative tasks, instruction that is in-class or distance-based, instruction that encourages language self-analysis, or instruction that does or does not involve human-human interaction. Effective human-computer interaction is possible through newer technologies that involve natural language processing and intelligent CALL, including grammar checkers and automated writing evaluation. Fee-based automated writing evaluation tools (for example, Grammarly and Criterion) allow learners to check their grammar and organization before submitting it for an assignment or public view. Alternatively, learners can use human-created content for meaningful self-directed learning, such as searching for a collection of written texts or corpora (for example, through COBUILD or COCA). Corpora can be native texts or those created by learners.

Improvements in speech recognition allow learners to practice their spoken grammar and provide increased accessibility for learners with disabilities. Technology can also assist in grammar instruction in large classrooms or low-resource environments; individualized instruction can be provided through group projects such as collaborative writing in synchronous or asynchronous Web-based environments (for example, Google Docs, PBWorks, or instant chat tools) or with customized feedback. Synchronous CMC projects pairing native and non-native speakers can aid learners in giving and applying feedback. Using technology in low-resource environments continues to be a struggle, though educators can access resources such as digital flashcards or grammar-based games for flip phones and other low-cost devices.

Today, the needs of modern society make the knowledge gained in formal education appear insufficient. Continuous learning and ongoing skill development through adulthood are essential (Puretra, I., 2015). Lakerveld et al. (2012) clearly state that “learning itself is in such a permanent evolution that it requires a permanent re-orientation”. It enables more professional and career opportunities for individuals; it allows them to cope with the demands of modern society. When trying to fulfill the demands of this changing world, we encounter the philosophy of lifelong learning.

This term refers to the learning process throughout one’s life. It occurs in different contexts and environments. Covering not just the formal learning that we can find in a school or institution, but also

non-formal and informal learning that can be found outside formal traditional education. It plays a crucial role in overcoming the current challenges experienced in the professional development process. It complements the formal system of education and provides the learner with the knowledge, skills, competencies, and attitudes necessary for personal fulfillment, active citizenship, and employability (Puretra, I., 2015; Lakerveld et al., 2012).

When discussing lifelong learning (LLL), it is impossible to overlook technology’s significant role in facilitating access. Lifelong learning is now a reality thanks to individuals’ access to technology. The many different devices with access to the internet available in our homes, workplaces, and communities are powerful tools that support LLL (Laal, M., 2013). Many users can easily access different content sources that help improve and develop their skills and construct new knowledge.

The digital resources that can be easily accessed online are an essential element supporting lifelong learning. Today, enrolling in a face-to-face course to develop a skill or learn about a topic is unnecessary; currently, education is not limited to classrooms. Access to any information or content is available on our devices—for example, online courses, educational videos, articles, and interactive digital tools. Therefore, the easy availability of the devices allows us to choose how and when to use them. It gives access to education anytime and anywhere (Waycott, Jones & Scanlon, 2005, as cited in Puretra, I., 2015; Cooker, 2020). Puretra (2015) also states that it is convenient “to make use of the natural benefits of lifelong learning, it is

important to devise a practical content that is easily applied in practice.” The digital resources that are now accessible to most people around the world perfectly fulfill this requirement.

A Content Management System (CMS) is a valuable tool for facilitating English grammar teaching and learning. It makes possible the creation, organization, storage, and digital presentation of content, allowing interactions between students, teachers, and instructional materials. This system enables various forms of engagement; student-content interaction is a clear example. In the context of grammar teaching, a CMS can host a wide range of interactive exercises, quizzes, and multimedia resources designed to reinforce grammatical structures and rules. Teachers can upload instructional videos, worksheets, and grammar practice activities that students can access on their devices anytime, promoting autonomous learning in this way.

Digital competencies for teachers to promote learning grammar

In today’s world, understanding how technology functions is fundamental and must be part of everyone’s education. Digital literacy is necessary to use technology and its tools in different social contexts efficiently. In this way, they can be effectively used by implementing them in daily life and thus optimizing the development and functioning of many real-world tasks or activities (Lakervel et al., 2012).

In teaching and learning a language, the knowledge and implementation of digital tools bring positive effects. An infinite number of resources that complement and open opportunities for learning class content can be found online. However, to use technology for educational purposes, educators need skills beyond the basic skills needed to operate the tools (Instefjord & Munthe, 2017; Cooker, 2020). Therefore, professors must adapt to the new skills and training in the competencies required to provide efficient and effective language instruction. Regarding grammar teaching, educators seek technological tools to overcome several associated challenges. It should be noted that to enable the use and implementation of technological tools, teachers require several digital competencies. This term is precisely defined as the set of knowledge, abilities, and attitudes required to be functional in today’s digital world by achieving the objectives related to work, employability, learning, or leisure (INTEF, 2017). Five areas of digital competencies can be found in the standard digital competence framework for teachers (2017). The first area is related to information and data literacy. It involves finding information online, locating relevant teaching resources, efficiently selecting educational resources, managing several information sources, and developing personal information strategies. Additionally, the user can collect, process, and understand digital content critically. The second area is called communication and collaboration. It includes interaction through digital resources. All this can be done by being aware of the

importance of digital identity. In the third area, the competencies regarding digital content creation can be found. It involves the creation of multimedia content and software, as well as the awareness of intellectual property rights and licensing regulations. The fourth area is safety, which involves protecting the elements involved in technology usage. Finally, the last area is considered problem-solving. This involves identifying needs in the use of devices or digital resources.

Implementing technology and grammar tools in the classroom relies on the teacher's capabilities and the student's context. Educators need to be able to use grammar resources, apps, or tools online. However, they need to be able to assess both access to and management of digital resources, as well as the context in which learners will use them.

Authoring tools enable teachers to create or adapt activities to align with class topics. Tools for developing interactive activities are no longer complex due to pre-designed elements or templates

that can be found on the internet. They allow the rapid and easy creation of interactive activities, quizzes, and tests. Basuhail (2009) states that they offer significant features that make tasks traditionally performed on paper more efficient. For instance, they support storage, content modification, reusability, and information sharing (Khademi et al., 2011). Language teachers can easily combine text, video, audio, and images to create more interactive and engaging materials.

One challenge language teachers face when incorporating technology into their classrooms is a lack of technical skills, combined with the high costs of software (Başal, 2012). Undoubtedly, resources for complementing grammar classes are available online; however, not all are accessible to users. Many resources may require specific software, subscriptions, or advanced technical skills that can limit their usability. Additionally, the quality and relevance of available materials vary significantly, making it crucial for educators to evaluate resources carefully before integrating them into their teaching.

Digital competencies for teachers to enhance learning as lifelong learning

The importance of the competencies addressed previously lies in their effect on students' learning. Adequate knowledge and usage of these tools allow complete and efficient learning. Digital competencies are fundamental for educators as they provide them with the tools and skills necessary to adapt to the requirements of today's society. It is worth noting that competence implies not only what someone knows about a particular topic but also what they are able to do with this knowledge (Lakervel et al., 2012). Those responsible for teaching new students must be able to guide them in their education process through the new means available thanks to technology (INTEF, 2017).

The digital competencies help to build a new environment in and outside the classroom. Digital competencies have become an essential element in the classroom, and

they are part of the daily practice of modern teachers (Gudmundsdottir & Hatlevik, 2018, as cited in Rakisheva & Witt, 2023). These enable new learning experiences through access to digital tools, which can motivate students and promote autonomy in the learning process. Teachers with digital competencies can model the effective use of technology, helping students develop essential digital skills for lifelong learning. In this way, they can guide students and ensure that learners possess the digital skills and competencies required in the workforce, where employment opportunities require access to digital platforms and the skills to use them (CAS 2018, as cited in Coker, H, 2020). Each student must be prepared to meet the demands of a life where continuous change is the norm, and stability is no longer the exception (Lakervel et al., 2012).”

The impact of using digital resources and tools in English learning for grammar

Intrinsically motivated and interested students, particularly through technology-enhanced learning, take greater ownership of their educational journey. The role of motivation cannot be understated in successful second language acquisition, prompting educators to adopt engaging teaching strategies. Online gaming platforms have emerged as practical, motivational tools for English grammar instruction. Research demonstrates the effectiveness of game-based learning for grammar mastery. Students achieve superior results when grammar concepts are presented through online gaming platforms, primarily due to the enjoyment and motivation these platforms provide. The engaging nature of educational games boosts students’ confidence and interest in grammar learning, offering a welcome alternative to traditional teaching methods. As students develop positive associations with grammar through gaming, their performance naturally improves. This suggests educators should embrace online language games as instructional tools, effectively incorporating technology to optimize learning outcomes. In our increasingly digital world, game-based learning presents a powerful opportunity for English language learners. (Hashim, Rafiq, & Yunus, 2019)

Strategies used to enhance English Language learning for grammar using digital resources.

Rote memorization of grammar forms is becoming more interactive, such as on-line flashcard tools (Quizlet), allowing learners or teachers to create and share their flashcards and customize activities or assessments. Web-based forms or surveys (for example, Google Forms) can be used for tasks moving from individual to collaborative analysis. For example, teachers can create a Web-based form with some student-generated sentences that contain grammar errors; after submitting corrections to the errors, groups of students can analyze the spreadsheet of answers to determine if revisions are grammatically correct and which ones best convey meaning within the piece of discourse. Groups can present their findings to the class, discussing rationales for their choices. Teachers seeking learning-oriented assessments can vary this task by having students complete the Web-based form and submit answers individually for teacher feedback. Analyzing student responses in the spreadsheet format increases grading streamlining, decreasing teacher grading time. (Bikowski, 2018)

Conclusion

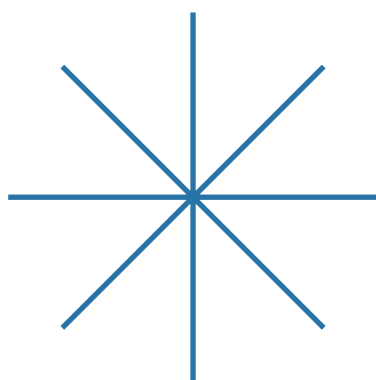
Technology has transformed the development of language learning positively. In the context of grammar teaching, the opportunities offered by implementing new technologies are endless. The employment of these digital resources enables dynamic and interactive experiences that allow students to interact with grammar innovatively and engagingly. These tools allow students to learn the grammar topics and structures meaningfully by encouraging autonomous learning. Integrating audio, visual, and interactive elements allows students to participate more actively in their learning, leaving conventional classroom routines aside. Similarly, educators' digital literacy is emphasized by highlighting how their familiarity with these tools is essential to effectively integrate technology into grammar instruction. They are faced with continuously evaluating materials, resources, and students' contexts to use these digital tools effectively. In summary, in this changing society, providing students with the necessary resources and skills to support independence in the learning process is necessary.

References

- Almekhlafi, A. & Nagaratnam, R.P. (2011). Difficulties in Teaching and Learning Grammar **in an EFL Context**. *International Journal of Instruction*, 4(2), 69-92. https://www.researchgate.net/publication/284044214_Difficulties_in_Teaching_and_Learning_Grammar_in_an_EFL_Context#fullTextFileContent
- Başal, A. (2012). Authoring tools for developing the content in language education. *International Journal on New Trends in Education and Their Implications*, 3(4), 1309-6249. http://ijonte.org/FileUpload/ks63207/File/16._basal.pdf
- Bikowski, D. (2018). Technology for Teaching Grammar. *The TESOL Encyclopedia of English Language Teaching*. 1-7. https://www.researchgate.net/publication/326689342_Technology_for_Teaching_Grammar#fullTextFileContent
- Coker, H. (2020). Why does digital learning matter? Digital competencies, social justice, and critical pedagogy in initial teacher education. *Journal of teaching and learning*. 14(1), 133-141. <https://doi.org/10.22329/jtl.v14i1.6259>
- De Gala, J. C. (2018). Problems met in learning grammar. *Academia*. https://www.academia.edu/37404792/Problems_met_in_learning_grammar_dcber_2018_pdf
- Ellis, R. (2006). Current Issues in the Teaching of Grammar: An SLA Perspective. *TESOL Quarterly*, 40(1), 83-107.
- FluentU. (n.d.). *Learn English Grammar Online: 15 Best Free and Paid Resources for English Learners*. FluentU. <https://www.fluentu.com/blog/english/learn-english-grammar-online/>
- Greenbaum, S. (1996) *The Oxford English Grammar*. Oxford University Press. <https://khmer-collection.wordpress.com/wp-content/uploads/2011/03/english-grammar.pdf>
- Hanganu, E. C. (2014). Grammar and Grammars. *Academia*. https://www.academia.edu/12985693/Grammar_and_Grammars_1_Grammar_and_Grammars
- Hashim, H., Rafiq, K.R.M. & Yunus, M. (2019). **Improving ESL Learners' Grammar with Gamified-Learning**. *Arab World English Journal (AWEJ) Special Issue on CALL* (5). 41-50. <https://dx.doi.org/10.24093/awej/call5.4>
- Ilyosov, F. (2021). Some approaches of teaching grammar. *International Journal on Orange Technology*, 3(6), 4-7. https://media.neliti.com/media/publications/348134_some-approaches-of-teaching-grammar-1b38d24e.pdf
- Instefjord, E. J., & Munthe, E. (2017). Educating digitally competent teachers: A study of integration of professional digital competence in teacher education. *Teaching and teacher education*, 67, 37-45. <https://doi.org/10.1016/j.tate.2017.05.016>
- Instituto Nacional de Tecnologías Educativas y Formación del Profesorado (Ed.). (2017). Common digital competence framework for teachers. https://aprende.intef.es/sites/default/files/2018-05/2017_1024-Common-Digital-Competence-Framework-For-Teachers.pdf
- Khademi, M., Haghshenas, M., & Kabir, H. (2011). A review on authoring tools. *Proceedings of the 5th International Conference on Distance Learning and Education*, 40-44.
- Laal, M. (2013). Lifelong learning and technology. *Procedia-social and behavioral sciences*, 83, 980-984. <https://www.sciencedirect.com/science/article/pii/S1877042813012494/pdf->

f?md5=f19dd731182d88a9582c91ace40ffe18&pid=1-s2.0-S1877042813012494-main.pdf&_valck=1

- Lakerveld, J. van, de Zoete, J., & Gussen, I. (2012). *Evaluating key competences: What are key competences for lifelong learning and how they can be assessed*. European Commission. <https://ec.europa.eu/programmes/erasmus-plus/project-result-content/75727f9e-1b00-41f4-b684-7305f02f66d9/VintageStateofArtIntro.pdf>
- Ling, Z. (2015). Explicit Grammar and Implicit Grammar Teaching for English Major Students in University. *Sino-US English Teaching*, 12(8), 556-560. <https://www.davidpublisher.com/Public/uploads/Contribute/55d44b4a89ed9.pdf>
- Ogu, A. E., Ahumaraeze, C. & Ujowundu, L. (2016). Grammar. En Ogu, A. E., Ihejirika, R. C., Amadi, D. C. & Emejulu, O. A. (Eds.), *Grammar* (pp. 2-61). Skillmark Media Ltd. https://www.researchgate.net/publication/332258836_Grammar#fullTextFileContent
- Pureta, I. (2015). Lifelong learning process using digital technology. *Interdisciplinary Management Research*, Josip Juraj Strossmayer University of Osijek, Faculty of Economics, Croatia, 39-48. https://www.researchgate.net/publication/327976722_Lifelong_Learning_Process_using_Digital_Technology
- Rakisheva, A., & Witt, A. (2023). Digital competence frameworks in teacher education-A literature review. *Issues and Trends in Learning Technologies*, 11(1), 29-42. <https://files.eric.ed.gov/fulltext/EJ1428189.pdf>
- Teach Starter. (n.d.). *Grammar Resources*. Teach Starter. <https://www.teachstarter.com/au/learning-area/grammar/>
- Widodo, H.P. (2006). Approaches and procedures for teaching grammar. *English Teaching: Practice and Critique*, 5(1), 122-141. <https://edlinked.soe.waikato.ac.nz/journal/files/etpc/files/2006v5n1nar1>



CHAPTER



VI



Learning vocabulary with the use of digital tools and resources

Jorge Martínez Cortéz

Introduction

Vocabulary learning could be thought of as something swift, and there is a tendency to do it through repetition. Notwithstanding the above, learning necessary concepts must be based on the student's needs and the environment in which he or she operates. Sardiñas et al. (2023) also assert that vocabulary learning entails learning the target language's culture. Thus, the teaching-learning process must be as close as possible to real situations where the student is committed to learning vocabulary that will be part not only of his or her daily life but also of his or her repertoire of updated daily words. For decades, excessive importance has been given to the acquisition of words (Alcaraz, 2021) in learning a second language, which, in addition to complicating learning, does not contribute to quality learning. Traditional teaching, far from helping during the face-to-face process, greatly hinders this learning. Despite the countless investigations on vocabulary learning, the discussion of how to teach it and what is the best learning or teaching methodology continues at all educational levels.

Below are some reasons vocabulary learning significantly affects the learning process, where innovation and the teacher's work are the reason for the student's existence, but only if there is adequate preparation and training of teachers, regardless of the level at which it is implemented.

Some approaches to developing

There are different methods and techniques for learning vocabulary in a second language. However, it is important to mention (Tamini, 2018) that they can be found in the most traditional (Costică, 2015), where the teacher and the dictionaries were considered the ones who had all the knowledge to more up-to-date learning methods and strategies such as Communicate Language Teaching where more up-to-date resources are handled especially with the use of Educational Technology. There cannot be a specific method for vocabulary learning because, according to the working conditions and especially the student's learning strategies, the student will directly apply and create his or her personal learning Environment (PLE). Cabezas et al. insist that there is no specific definition of a PLE since the conditions and the space where the student is located vary. This is how the same environment will considerably affect vocabulary learning depending on one's needs or learning objectives.

Another concept that must be considered in vocabulary teaching-learning is the transfer of learning strategies from L1 to L2. It is believed (Kartsevski, 2023) that the same learning strategies can be the same for both languages, but some of these strategies apply to an L1 but not always to an L2. A recurring example of this type of strategy is the endless lists of words that will later be attempted to be learned by heart, of which only 5% will be learned and which will be retained in long-term memory due to the relationship of some words with the student's previous experiences.

How to Improve English Language Learning

Learning a foreign language must be permanent. However, the language must be present in the student from different moments. To be close to the language, it is necessary to constantly read it to acquire vocabulary, idiomatic phrases, expressions, etc. This indirect learning of terminology impacts oral fluency and good diction. In addition, the development of interactive and motivating activities (Caicedo, 2023) designed by the teacher improves the quality of learning, especially if they are tailored to the needs of the students and consider their learning strategies.

It is worth mentioning that language learning depends mainly on the strategies implemented by the student (Bueno & Font, 2020) and that, in some way, the teacher must improve or update them. This means that the teacher-student duo is responsible for the learning process. On the part of the teacher, he/she must analyze the learning strategies and styles and the needs and deficiencies of his/her students, which will take some time if this research is scrupulous. In the same way, the teacher must provide support in the student's learning and not depend entirely on him/her. In the case

of the student, he/she must consider that his/her learning must also be autonomous (Valenzuela et al., 2016), where he/she applies his/her most effective learning strategies and where he/she makes use of new methodologies for the benefit of permanent knowledge and that he/she adapts to new experiences to generate new acquisition processes and improvement of learning in general of all the skills and sub-skills of a language. This quality improvement will be activated by incorporating new vocabulary into the student's vocabulary and terminology repertoire.

Digital resources or tools used to improve vocabulary

There are currently many support resources for vocabulary learning. It is important to mention that most of these supports are for more personalized learning that requires each student's commitment. On the other hand, the resources can be specialized software, applications, or electronic devices that are continually being renewed or updated. Zamora and Flores (2023) mention the importance given to current resources to approach educational technology and the ease of putting knowledge into practice more frequently, such as using vocabulary in a more globalized context. Digital resources are restructured very quickly, and to a certain extent, the benefits are greater as long as the work is done autonomously. The autonomous student develops self-learning skills more quickly, but in the case of vocabulary, this type of learning is feedback and focuses more on the needs of the students.

Mobile learning has countless resources available for students of any language level. Authors such as Daly (2022) assert that students, on average, must learn between 8,000 and 9,000 word families to have an adequate level of language formally. However, the challenge students face is learning vocabulary that will be part of their language development process. Although he mentions that it must be memorized in a very short time, the student needs to learn how to do it, but at the same time understand it in its use and application, depending on the situation in which it is required. Memorization, to a certain extent, is not adequate due to the lack of use that a word may have. That is why mobile learning can be the ideal resource that everyone can consider, so that, according to their needs and learning strategies, they can select digital tools that, through practice, facilitate more constructivist learning. This type of learning has not been able to grow for multiple technological reasons for many teachers, even though they know that 100% of students have a mobile device. The key to success in working with mobile learning lies in part in collaborative work and how the teacher manages to introduce motivating activities that are the starting point for individualized work that will increase the teacher's level of independence.

Motivation in learning, combined with the excitement of video games, is the most accessible way in which the language can interactively reach the student. Vocabulary is easier to handle and can be increased as students' progress in everyday activities that can be done from any space, regardless of whether they are in the classroom. As long as the activities are online, there will be no accessibility problems because students are permanently connected to the network. It is also important to emphasize that the applications where the activities are developed must be attractive, such as Quizziz or Kahoot, since students tend to get involved at very high levels due to the self-motivation generated by the games.

In addition to using mobile applications, gamification through websites or free or paid software can be an excellent alternative for students who need to reinforce vocabulary learning. For some teachers (Zepeda et al.), the use of activities with interactive educational games should start in the classroom, where student motivation should be the start to establish learning objectives, but mainly to make vocabulary learning attractive and encourage learning autonomy. Academics continually encounter challenges of adapting to new teaching methodologies that are constantly changing and require a positive attitude for the benefit of their students. The use of gamification in activities where learning deficiencies are addressed or a learning topic is introduced encourages students by recognizing the effort of the academic to acquire knowledge indirectly in the classroom. This type of game shows students (Cameron, 2001) the three

basic concepts they must learn, the first of which is its meaning and alternatives of the same word, then how to pronounce it, and finally, how other words can be generated and word families formed.

One of the excellent advantages of gamification (Briceño, 2022) is the immediate self-assessment that the student receives in real time on whether the responses are correct or incorrect. Vocabulary acquisition becomes another activity of knowledge consolidation or review of the vocabulary that is intended to be achieved. This type of interactivity must be very carefully prepared in the preparation of the material by the teacher, since he or she considers which words the student should add to his or her daily vocabulary repertoire.

Following the same pattern of learning through educational technology, the use of digital tools that promote the reproduction of audio texts can also be found in a very accessible way. The ease of transforming texts into audiobooks is an excellent alternative for those who need to learn vocabulary indirectly to practice the pronunciation and intonation of more complete sentences. The possibility of listening to the exact text several times, not only for pronunciation but also for learning by repetition, generates the possibility of establishing structures that will be used for specific moments in a conversation. This type of audio can also be combined with karaoke-like tools, which help to practice the language and encourage reading and pronunciation. Tools such as Lyrics training are ideal for this type of learning, which is also interactive and entertaining.

The relevancy of digital resources for students' learning as a lifelong learning?

The use and practice of digital tools require the student to be interested in learning. Students must constantly look for educational resources that motivate them and support quality learning for the rest of their professional lives. The student has the advantage of having digital competence because he is a digital native to a certain extent. This does not mean that he can handle educational technology 100%. However, it is easier for him to develop skills that keep him updated with his needs. Digital resources are constantly being updated with software, and with the appearance of new support resources, the learning process is facilitated and offers new conditions or learning paths that consolidate established objectives and encourage new ones to improve this process. As educational technology advances, initially with ICTs (Information and Communication Technologies), then with TACs (Learning and Knowledge Technologies), which are continually evolving, TEPs (Empowerment and Participation Technologies) that continue to expand knowledge, and finally, the use of artificial intelligence, which is still under discussion whether it benefits the student by facilitating processes that eliminate work and research on topics of interest to the student. Of the resources mentioned, social networks (TEPs) such as Facebook, Instagram, X, etc., have had an outstanding impact by presenting short videos of content of all kinds, especially for language students. The levels of English in a classroom (Garzón et al., 2023) vary regardless of the academic level where they are. This variety of language levels is due to students' importance to their learning. This is one of the basic reasons why educational technology can encourage students with low academic performance to excel academically through motivation by visualizing their achievements. As can be seen, learning has a great ally in educational technology and in the digital skills of students who must change the educational paradigm of face-to-face learning and combine different modalities, techniques, methods, and learning strategies that support the student, especially in autonomy, where the teacher is a facilitator of knowledge.

Digital competencies teachers need to use digital resources and tools

The digital divide has been one of the significant challenges faced by teachers at all educational levels due to several reasons, such as the credibility of the use of the network for different objectives, the resistance to the change of educational paradigm, the lack of digital and technological teaching skills, the digital outdatedness of teachers and the attitude of teachers with students about their learning.

In the case of credibility with the use and management of the Internet, teachers, far from seeing the speed and veracity of results that can be obtained in evaluations of students, prefer to do their evaluations in a traditionalist way where, in addition to saving time, they could make educational innovation by offering more time to students in feedback and support through other means.

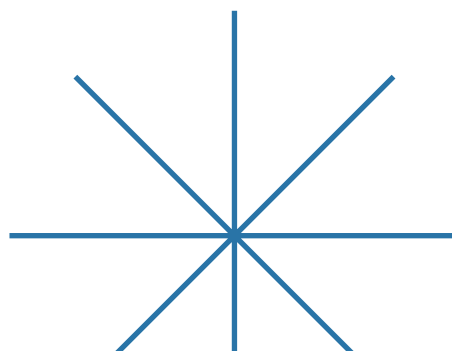
The resistance to change is more than clear concerning the continuity and comfort in face-to-face teaching without having to move to the great variety of alternatives that educational technology presents. The lack of interest (Córica, 2020) in the professional career or the lack of collaboration with other teachers to maintain a space of comfort and with the variants of the school calendar full of work suspensions where the most affected is the student. For this reason, the student has to look for other learning alternatives, such as tutorials, to help them in their academic progress.

The lack of Digital Teaching Competencies is a consequence of the lack of teacher training but mainly of the lack of interest in learning new work alternatives that benefit the teacher positively and the student in the teaching-learning process. This deficiency is not only in older people but in general in all academics who do not redirect their attention to all the be-

nefits they can acquire. Social networks are where most academics are to socialize, not to spread the knowledge learned. These networks distance the teacher from their academic activities, one of the main distractions from personalized learning. When the teacher creates his/her own PLE (Personal Learning Environment), digital teaching skills are created and strengthened as the teacher becomes more interested in how to teach and support his/her students. Nowadays, new electronic devices improve teaching quality, such as projectors for the classroom and countless applications or websites that support language learning.

The teacher's attitude is a key piece (García & González 2020) in student learning, especially in personalized teaching through different media such as discussion forums, WhatsApp groups, educational platforms, and so forth. With them, synchronous and asynchronous communication is the closest link between the student and the teacher. This communication is necessary for students to have a more specific and personalized extracurricular academic support space.

According to the above concepts, the teacher requires digital, technological, and communication skills that promote the development of linguistic skills that will underpin the development of interactive and innovative activities for the student.



Digital competencies for teachers to promote and enhance learning as a lifelong learning

Digital Teaching Competencies have become a fundamental part of teacher training that requires constant development of activities, interactivity in the classroom, and innovation in evaluating and promoting extracurricular activities. This type of competencies promotes motivation in students in a constant way from different concepts such as access to free or paid digital resources and tools that are continuously updated, the promotion of Autonomy promoted by teachers towards students that are tirelessly sought from lower levels, adaptation to new learning environments or methodologies with the use of educational technology, personalization of learning (PLEs) through innovative activities for the benefit of their learning, the promotion of critical thinking as well as problem-solving and finally collaborative learning and permanently connected to knowledge from and to different educational platforms.

This type of competence not only enriches the new strategies, techniques, methodologies or current learning environments, but they are also responsible for creating a greater interest in the teacher to serve their students. CDDs must be continuously developed to be updated with current and future technologies. As technology advances, new learning strategies are required, as is now being addressed with the use and application of artificial intelligence. Artificial intelligence is reshaping digital teaching skills.

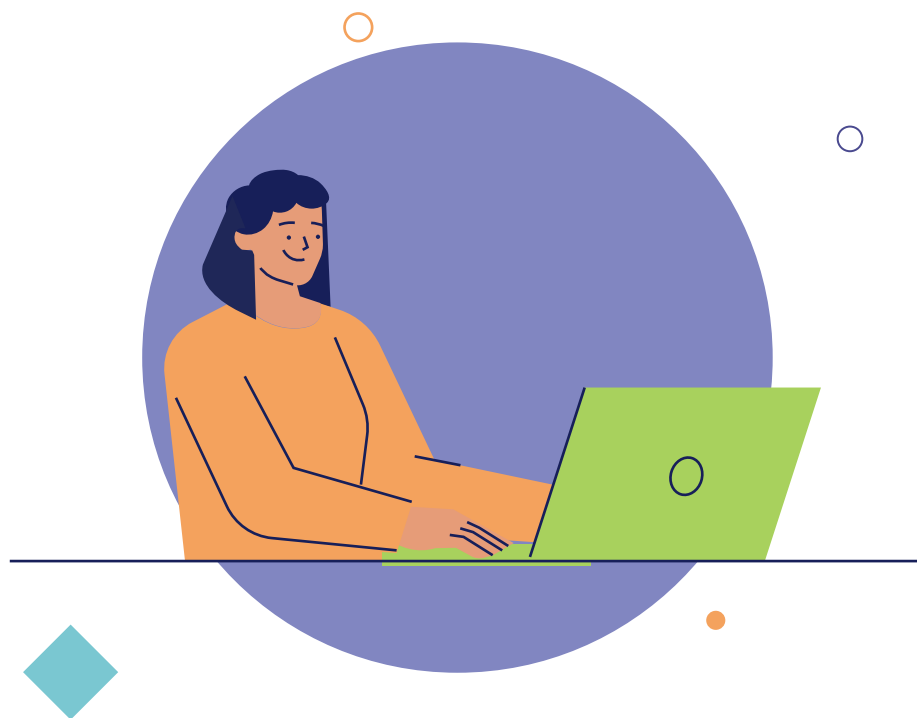
The impact of using digital resources and tools in English learning

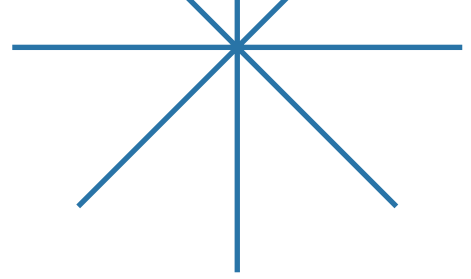
The progress in learning English vocabulary is tangible and verifiable as long as one works autonomously. Learning alternatives is possible when educational technology presents different alternatives through mobile, inverted learning, digital resources, web pages, and free or paid software. In the case of mobile learning, the expectations are highly positive because there are tools or applications specifically for learning general vocabulary or for specific purposes. Unfortunately, the impact is not achieved as long as mobile learning is not given the importance it deserves. Currently, there is no benefit (Valera et al., 2023) from the fact that 100% of students have a mobile device, which is not considered a support resource for the class. Mobile applications can be worked on formally or informally through gamification, with highly positive results. In the case of flipped learning, the recording of videos by the teacher or other academics of the thematic content (Guillermo, 2024) that the student requires for their learning or as a support resource for a class is one of the most complete ways to reach students with quality learning in collaborative work. In this area, the decision to record videos

is up to the teacher, who is still afraid of recording himself due to a lack of digital skills to edit the videos. Notwithstanding the above, academic training in technology is the solution to this situation.

Web pages are also highly recommended for vocabulary learning; the only drawback is having time to locate them. The teacher must try to do an insistent search for what their students need. An alternative to reduce this search is linking specialized sites through social networks, where these types of resources for teachers are continually disseminated.

Finally, free or paid software is an alternative that can also solve, as a teaching resource, Learning must be autonomous to avoid being too attached to the teacher. Teacher support is essential, but it is not everything. Students must consider that their learning must be as personalized as possible so that the results are as positive as possible and have a long-term impact on memory.





Conclusion

Vocabulary learning can occur in various ways with the support of educational technology. However, the responsibility falls on the teacher and the student in equal parts, where the support resources are the backbone that will unite them in learning a language. When achieving learning objectives, it is important to note that the academic training of teachers is part of the solution to digital teaching skills. The complement of these is the collaborative work and communication between teachers of any educational level. Today, social networks are part of teachers' lives where information flows constantly, so it is an appropriate means of communication. Sharing the digital resources of teachers and students clarifies the paths that must be followed, in addition to the continuity of learning, the acquisition of quality knowledge in the human being.

The strategies and learning styles of the student are part of the paths that redirect to knowledge; it is important to highlight that the adaptation and improvement of learning methodologies depend mainly on the student's decision to learn and improve learning processes. However, it is essential to consider personal learning environments (Cabrales et al., 2010) (Soler et al., 2021) where the appropriate digital tools will lead the student to success, especially when working independently of the teacher. These learning environments are the ideal spaces for putting into practice the possible deficiencies that the student has and improving the knowledge that he or she already has. Language acquisition requires establishing basic goals and objectives from the PLE. This way of working must be established periodically to give new scope to learning.

The language also aims at an approach to culture, where vocabulary is essential for different areas and skills. Vocabulary learning becomes a surprising area, but simultaneously, it is complicated and complex when related to terminology. The student becomes a specialist in an area of knowledge or specialty where not many can get involved due to the use of standardized language. It can be concluded by mentioning that vocabulary learning is the strength of the student's fluency, as long as there is sufficient learning and practice day after day.

References

- Alcaraz, G. (2021). APRENDIZAJE DE VOCABULARIO EN SEGUNDA LENGUA EN EDUCACIÓN PRIMARIA: PONIENDO A PRUEBA EL MODELO TECHNIQUE FEATURE ANALYSIS. RLA. Revista de lingüística teórica y aplicada, 59(2), 43-62. <https://dx.doi.org/10.29393/rla59-10avga10010>
- Briceño, C. (2022). La gamificación educativa como estrategia para la enseñanza de lenguas extranjeras. ACADEMO, vol. 9, núm. 1, pp. 11-22. <https://www.redalyc.org/journal/6882/688272308002/html/>
- Bueno, C. & Font, S. (2020). Los estilos de aprendizaje: su utilización en el proceso de enseñanza- aprendizaje de la Práctica Integral de la Lengua Inglesa I. VARONA, núm. 71. <https://www.redalyc.org/articulo.oa?id=360670951021>
- Cabezas, M., Casillas, S. & Acuña, S. (2016). Entorno personal de aprendizaje (PLE): una propuesta para desarrollar las competencias digital e informacional en la enseñanza universitaria del derecho en Colombia. Aula, 22, 271-287. <https://doi.org/10.14201/aula201622271287>
- Cabral, M., Cáceres, J., & Feria, I. (2010). La autonomía en el aprendizaje del inglés y su relación con los trabajos independientes asignados a los estudiantes. Íkala, revista de lenguaje y cultura, 15(26), 119-150. <https://www.redalyc.org/pdf/2550/255019849005.pdf>
- Caicedo, S. (2023). Estilos de aprendizaje para mejorar el idioma inglés. Revista Arbitrada Interdisciplinaria Koinonía. <https://doi.org/10.35381/r.k.v8i2.2970>
- Cameron, L. (2001). Teaching languages to young learners (1er. ed.). Cambridge Language Teaching Library. <https://assets.cambridge.org/052177/3253/sample/0521773253WS.pdf>
- Córica, J. (2020). Resistencia docente al cambio: Caracterización y estrategias para un problema no resuelto. RIED. Revista Iberoamericana de Educación a Distancia, vol. 23, núm. 2, pp. 255-272. <https://www.redalyc.org/journal/3314/331463171013/html/>
- Costică, L. (2015), Strategies for Teaching and Learning of the Vocabulary English Language in Romanian Schools. International Journal of Innovation and Research in Educational Sciences Vol. 2, Issue 5. https://www.ijres.org/administrator/components/com_jresearch/files/publications/IJIRES_372_Final.pdf
- Daly, N. P. (2022). Investigating learner autonomy and vocabulary learning efficiency with ALL. Language Learning & Technology, 26(1), 1-30. <https://doi.org/10.1257/73469>
- García, J. & González, M. (2020). La comunicación y la interacción como aspectos clave de los entornos personales de aprendizaje: Perspectiva de estudiantes costarricenses de educación. Revista Electrónica Educare, 24(3), 100-119. <https://dx.doi.org/10.15359/ree.24-3.5>
- Garzón, J., Monsalve, A. & Zuleidy, E. (2023) Impacto de las tecnologías de la información en los estudiantes del grado aceleración del aprendizaje en un curso de inglés. Revista Virtual Universidad Católica del Norte, núm. 68, pp. 37-62. <https://www.redalyc.org/journal/1942/194274184004/html/>
- Guillermo, L. (2024). El efecto del aula invertida en el aprendizaje de inglés: Revisión sistemática. Horizontes Revista de Investigación en Ciencias de la Educación, 8(32), 544-559. <https://doi.org/10.33996/revistahorizontes.v8i32.743>

- Kartsevski, M. 2023. Transferencia lingüística desde L1 a L2 en escritura: una revisión sistemática. *Literatura Y Lingüística*. DOI: 10.29344/0717621X.47.3432
- Sardiñas, J., Pérez, R, & Romero, D. (2023). El aprendizaje de la lengua inglesa en condiciones óptimas en los jóvenes y adultos. *EduSol*, 23(84), 124-137. http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1729-80912023000300124&lng=es&tlng=es.
- Soler, R., Tan, Q., Pivot, F., Zhang, X., & Wang, H. (2021). Personalized and adaptive learning: educational practice and technological impact . *Texto Livre: Linguagem e Tecnologia*, 14(3). <https://doi.org/10.35699/1983-3652.2021.33445>
- Tamini, S. (2018). Teaching and Learning Vocabulary: What English Language Learners Perceive to Be Effective and Ineffective Strategies. *Center for Educational Policy Studies Journal*. Vol 8 No 1. <https://www.cepsj.si/index.php/cepsj/article/view/492>
- Valenzuela, M., Romero, K., Vidal, C., & Philominraj, A. (2016). Factores que Influyen en el Aprendizaje del Idioma Inglés de Nivel Inicial en una Universidad Chilena. *Formación Universitaria*, 9(6), 63-71. <https://www.redalyc.org/pdf/3735/373549328006.pdf>
- Valera, P., Torres, M. Vásquez, M. & Lescano, G. (2023). Aprendizaje del idioma inglés a través de herramientas digitales en educación superior: revisión sistemática. *Horizontes Revista de Investigación en Ciencias de la Educación*, 7(27), 200-211. <https://doi.org/10.33996/revistahorizontes.v7i27.507>
- Zamora, F. & Flores, A. (2023) The Use of Digital Tools to improve Students' Vocabulary. *Revista Científica Multidisciplinaria Arbitrada YACHASUN*. Vol.7, N. 12. DOI: <https://doi.org/10.46296/yc.v7i12edespmayo.0312>
- Zepeda, S., Abascal, R., & López, E. (2016). INTEGRACIÓN DE GAMIFICACIÓN Y APRENDIZAJE ACTIVO EN EL AULA. *Ra Ximhai*, 12(6), 315-325. <https://www.redalyc.org/pdf/461/46148194022.pdf>

CHAPTER

VMI



Teaching pronunciation through digital tools

Rogelio Guarneros Rentería

Abstract

Nowadays, pronunciation has taken an important role in TEFL. Students are taught how to pronounce; however, they often struggle with phonemes (principally those not part of their native language), intonation, and stress. Although students practice in classrooms with the help of their teachers, it seems that there is not enough exposure to the language to achieve the appropriate pronunciation of words. As Gilakjani (2017) holds, for many students, technical explanations are difficult to understand and easily forgotten (p. 1252). He (2017) also claims that concrete demonstrations followed by much practice produce outstanding outcomes and that lessons should fit learners' level of understanding.

Below are some approaches to teaching English, as well as some apps and digital resources to foster pronunciation in students. These apps are focused on different levels, where students can independently practice pronunciation elements such as phonemes, intonation, stress, and rhythm.

Introduction

Pronunciation is one of the most challenging parts of learning English (Andini & Zaitun, 2023). Pronunciation is important to students, as they want to pronounce words correctly. According to Andini & Zaitun (2023), the most appropriate way to learn pronunciation in English is to imitate; an example of correct English pronunciation is given, and then the student imitates. For example, many factors are involved in pronunciation, rhythm, intonation, and stress. For students new to speaking or learning English verbally, it is highly recommended to study pronunciation material from the beginning and avoid mispronouncing (Mariani & Basuki, 2023).

Digital tools range from computers, applications, and web pages to digital textbooks and materials (Huong & Hung, 2021, p. 512). “Digital competence is one of the most demanded skills, and includes, among other aspects, the use of technological, informational, multimedia or communication skills and knowledge” (Esteve-Mon et al., 2020, p. 29). Esteve-Mon et al. (2020) also claim that in recent years, different institutions have included computational thinking in areas that make up digital competence.

The Audio-Lingual Method (ALM) is an oral language teaching approach based on Skinner’s Behaviorism theory (Bagheri et al., 2019). As Larsen-Freeman (2000) claims, the ALM drills students using grammatical sentence patterns. Even Kakunta and Kamanga (2020) hold that the ALM is a method for teaching foreign languages that points out the importance of listening and speaking before reading and writing.

Learning English pronunciation is how to pronounce vowels and consonants correctly (Pardede, 2018, p. 145). Many EFL learners find it difficult to speak confidently because of poor pronunciation (Pardede, 2018, p.143). As Mariani and Basuki (2023) demand, pronunciation is the study of the techniques and procedures for pronouncing English vocabulary. In addition, it is imperative to possess correct and proper pronunciation because people may get confused about what they mean, leading to misunderstandings (Gilakjani, 2017). Similarly, Baldissera and Tumolo (2021) claim that pronunciation is one of the core speaking skills necessary for successful communication, and the lack of instruction might result in a lack of confidence to speak or difficulties in understanding a Second Language. Consequently, learners cannot communicate effectively if they do not have perfect pronunciation skills (Gilakjani, 2017).

As Gilakjani (2017) claims, pronunciation must be taught as it is an important part of communication and plays a key role in communicative language teaching. Important parts in the pronunciation of English vocabulary include stress, rhythm, juncture (sound relationship), intonation, and tone (pitch sound); these elements can determine whether the pronunciation is done correctly or not (Pardede, 2018).

Gilakjani (2017) states that oral communication was not the main aim of language instruction in the past, so little attention was paid to speaking and pronunciation. The approaches to pronunciation teaching are usually discussed by contrasting the ‘bot-

tom-up' vs the 'top-down' approach (Pardede, 2018, p.145). According to Pardede (2018), the 'bottom-up' approach articulates individual sounds or phonemes and focuses on stress, rhythm, tone, and intonation. Then, he defines the 'top-down' approach as starting with intonation patterns and bringing separate sounds or phonemes into sharper focus as and when required.

Kakunta and Kamanga (2020) say the Audio-Lingual Method emphasizes acquiring structures and patterns in everyday dialogue. These patterns are elicited, repeated, and tested until the responses by the student in the foreign language are automatic (Kakunta & Kamanga, 2020). This is a method whose implementation focuses on training activities, drills, memorizing, dialogue, and reading texts (Tehrani et al., 2013). Bagheri et al. (2019) hold that the ALM has the core objective of enabling learners to use correct grammar and pronunciation, and it assists learners in responding accurately and quickly in conversations in and out of the classroom.

Richards and Rodgers (2001) suggest that oral work is strongly emphasized with the Direct Method, and pronunciation receives significant attention. Students mimic and do their best to be close to the teacher's model by imitation and repetition (Gilakjani, 2017). Moreover, Su Tseng Lee (2008) held that in the Direct Method, the central focus is on listening without pressure to speak, which gives the learners the chance to receive input and internalize the target sound system.

"The Reform Movement emphasized the priority of the spoken language over the written language. The reformers considered phonetics as the basis of the study

of language and correct pronunciation as the basis of learning. The significance attached to the mastery of accurate pronunciation persuaded teachers and learners to acquire knowledge of phonetics." (Gilakjani, 2017, p. 1251).

In audiolingualism, language was recognized, and speech and oral/aural skills were emphasized (Larsen-Freeman, 2000). The mastery of pronunciation and grammar of the target language was also greatly enhanced (Richards & Rodgers, 2001). Richards and Rodgers (2001) also add that listening and speaking exercises are designed to focus on pronunciation and that oral proficiency relates to accurate pronunciation and grammar.

In the Oral Method, as Gilakjani (2017) suggests, teachers and learners must be phonetically trained, and phonetic transcription must be applied extensively. He adds that teachers and learners should be concerned with mastering accurate pronunciation. In the Silent Way, the accuracy of producing the target language's sounds and structures is emphasized (Gilakjani, 2017, p. 1251). In Community Language Learning, correct pronunciation gets special attention from the learners (Gilakjani, 2017).

As Gilakjani and Ahmadi (2011) hold that "second language pronunciation is a cognitive skill for which some people may have more natural aptitude and/or interest and motivation than others, but which everyone can learn to a certain degree if given appropriate opportunities" (p.2). Nevertheless, they also claim that one common problem that learners deal with is that they tend to change conceptual patterns appropriate for their first language that they have internalized in childhood.

Regarding this, learners need help categorizing or conceptualizing sounds in a way appropriate to English (Gilakjani & Ahmadi, 2011). Gilakjani and Ahmadi (2011) also suggest the important role of using computers in helping learners with pronunciation, but this is not related to displaying speech waves without guidance on how they should be read. “It is certainly not the case that learners cannot produce these sounds; in almost all cases, they can produce perfectly acceptable versions of both sounds. The problem is that they do not have concepts of them as separate sounds” (Gilakjani & Ahmadi, 2011, p.2).

Accent refers to the cumulative auditory effect of those features of pronunciation that identify where a person is from, regionally or socially (Crystal, 2003, p. 3). Although many people believe that accent may affect pronunciation, Harmer (1991) reports that the primary aim is for students to be understood, where good pronunciation is needed for this, but a “perfect accent” is not. Many adult learners of English have foreign accents that identify them as non-native speakers (Gilakjani & Ahmadi, 2011). Recent research says that environment and motivation may be important factors in developing native-like pronunciation (Marinova-Todd et al., 2000).

The learner’s motivation and culture determine whether the learner will develop native-like pronunciation (Gilakjani & Ahmadi, 2011). Similarly, Marinova-Todd et al. (2000) concluded that adults can become highly proficient, even native-like speakers of second languages, mainly when motivated. Consequently, Gilakjani and Ahmadi (2011) stated that besides focusing on pronunciation and accent, teachers should encourage learners to speak

English outside the classroom and provide them with assignments to produce interactions.

Integrating digital tools in teaching English has brought transformative changes in the English teaching practice, influencing educators and learners in numerous ways (Harsha Vardhini, 2023). The impact of these tools is evident in various aspects of language acquisition and education since features like quizzes, games, and multimedia content capture students’ attention, motivating them to participate in lessons (Harsha Vardhini, 2023).

As Huong & Hung (2021) state, using digital tools in English classrooms has become indispensable, as they have proved effective in bringing about benefits in language development for English learners in many contexts. Moreover, digital tools such as smartphones, tablets, other sophisticated appliances, and new applications, for instance, X, Facebook, Instagram, and Skype, extend the potential for more resources and mediated learning (Huong & Hung, 2021)

Harsha Vardhini (2023, p. 508) holds that technology has become an indispensable ally for educators seeking innovative ways to engage students in the dynamic landscape of education. One such powerful tool that has gained widespread popularity recently is YouTube. This platform caters to diverse learning styles, combining visual and auditory stimuli (Harsha Vardhini, 2023). Harsha Vardhini (2023) explains that English learners can benefit from video content involving spoken language, intonation, facial expressions, and body language.

Similarly, Andini and Zaitun (2022) claim that using modern technology me-

dia like YouTube can also stimulate teaching and learning; this can increase student interest and motivation as the combination of sound and image will attract their attention. This platform has become a new educational tool that can be used as a source, material, and educational media (Andini & Zaitun, 2022). It is also a good audiovisual combination for pronunciation practice because it shows recordings or videos and provides sound (Andini & Zaitun, 2022). Evenly, Andini and Zaitun (2022) explain that using YouTube training videos with native speakers, English pronunciation and the components of accuracy, fluency, and intonation can be easily learned. Furthermore, learners can watch videos based on their interests and likes, so they implicitly hear and learn sounds. These videos allow students to listen to the correct and appropriate pronunciation, increasing pronunciation fluency over time (Andini & Zaitun, 2022).

Mobile Learning has become a reality as technology has gone mobile (Baldissera & Tumolo, 2021). Haryadini and Aprianoto (2020) held that apps, software, or other technologically devised learning increased over time. Learners cannot disregard the involvement of technology in improving their pronunciation (Haryadi & Aprianoto, 2020). Pronunciation apps may present many features designed to assist the development of pronunciation (Baldissera & Tumolo, 2021, p.1359). The opportunity to use an app for learning outside the classroom will reduce learning anxiety as learners have no teacher and peer pressure to determine their ways of learning (Haryadi & Aprianoto, 2020).

“Today, the number of apps produced by Apple or Android reasonably outnumber the previous date in 2015. English teachers and trainers only need to explore more to obtain appropriate apps for their learning contexts.” (Haryadi & Aprianoto, 2020, p.204).

Research conducted by Haryadini and Aprianoto (2020) suggests a Mobile Assisted Language Learning app called “English Pronunciation,” which has a simple operation manual and fits the learning needs of digitized students. It encompasses the definition of specific terms, explanations, practice examples, and a variety of menus, including a topic on Stress and Intonation, short vowels, long vowels, double vowel sounds, voiced consonants, and voiceless consonants (Haryadini & Aprianoto, 2020).

“The Automated Speech Recognition (ASR) can be considered another relevant feature of pronunciation apps; with it, learners may practice pronunciation and receive immediate feedback, that is, feedback just in time for learning.” (Baldissera & Tumolo, 2021, p.1361).

Baldissera and Tumolo (2021) advise another app called “English Pronunciation Tutor.” This app enables learners to practice all segments of English, individually and in contrast. In addition, they (2021) affirm that the app covers one suprasegmental feature: the stress in words and sentences. Baldissera and Tumolo (2021) also state that all units in the app offer descriptions and analysis of the pronunciation features by using textual information, narration, and visual representations. “Users are able to raise awareness of the pronunciation features presented and, in some lessons, may also discriminate sounds in the Listening Quiz section.” (Baldissera & Tumolo, 2021, p. 1365).

Harsha Vardhini (2023, p. 517) utters that in the ever-evolving landscape of education, integrating digital tools has become a transformative force, particularly in teaching English language skills. Digital tools facilitate dynamic and interactive learning experiences, offering activities such as language games, virtual simulations, and interactive exercises that make learning English more enjoyable and effective (Harsha Vardhini, 2023). Additionally, integrating digital tools in English language instruction teaches language skills and enhances students' digital literacy (Harsha Vardhini, 2023).

Shandu-Omukunyi (2023) claims that there is a mismatch between technologically advanced learners and their teachers, who are highly esteemed language practitioners. He (2023) also adds that technology in the classroom continues to grow, and it is recognized as a new methodology that promotes lifelong learning. Access to digital literacy skills prepares language education teachers to enhance and support language learning and teaching (Shandu-Omukunyi, 2023).

“The development and the introduction of artificial intelligence (AI) with computing, virtual and augmented reality, coding and robotics, digital storytelling, and other multimedia tools are worth exploring for language learning, teaching and assessment. Lack of deeper understanding of the affordances these technologies bring for language learning and teaching, remains a problem. (Shandu-Omukunyi, 2023, p. 195)

According to Alhabdan (2021), evaluating English learning websites and digital resources is imperative in determining the effectiveness of the electronic resource in facilitating learning. He (2021) adds that this evaluation can help learners determine if the content in a particular website is worth reading and helps them achieve their learning goals. These goals depend on the teaching methods, learning prospects, pedagogical skills, and learning styles adopted by the designers of the digital resources that are used to teach the target language (Alhabdan, 2021). So, teachers must evaluate and select the resources carefully.

“The impact of digital tools in teaching English is profound, revolutionizing traditional teaching methods and offering unprecedented opportunities for both educators and learners. As technology continues to advance, the integration of digital tools will likely play an increasingly crucial role in shaping the future of language education.” (Harsha Vardhini, 2023, p. 511).

According to Skakun (2021), in the short and long term, the impact of digitalization on pedagogical activity will increase. Digital literacy has become a mandatory professional competency for teachers (Skakun, 2021). He (2021, p. 47) adds that educational strategies should be developed that will not only declare the importance of digitalization of education but also form teaching-methodological, subject-practical, and organizational-logical settings to provide digital competencies for a teacher. Skakun (2021) holds that digital competencies have become a “bridge of understanding” between the traditional authority of the teacher and the innovative technological learning environments. So, in the digital competencies of the educator, the cluster of safety and ethical issues must be actualized along with technological skills (Skakun, 2021).

“Professional digital competence in the future is not a statement of digital literacy of the educator, but the ability to manage the individual digital capacity and digitalization capabilities of the educational system. Pragmatic approaches, which are fundamental in the modern sociocultural world, dictate such a model of implementation of digital competencies of a teacher in the future.” (Skakun, 2021, p. 50).

Next, Skakun (2021) claims that the elements of the future teachers’ digital competencies are closely connected with their individual qualities. Some aspects considered important for digital competencies are resistance to digital distractions, analyzing digital information and communication factors, and self-organizing professional qualities in the digital space (Skakun, 2021).

On the other hand, Perifanou and Economides (2022) propose the following digital competencies for teachers: Mapping, exploration, development, planning, class management and orchestration, lecturing, interaction and collaboration, formative assessment, monitoring, guidance and feedback, reflection, adaptation, personalization, evaluation, and revision.

Strategies for developing pronunciation

In the digital age, learners have access to a wide array of online platforms and mobile applications designed to enhance their speaking skills in English. These resources support the development of fluency, accuracy, pronunciation, and communicative competence in diverse and engaging ways. Below are some recommended tools and an explanation of how each can be beneficial:

English Pronunciation Tutor

This app enables learners to practice all segments of English, individually and in use. It provides basic knowledge of pronunciation for students who need to know and get instant material for pronunciation. It encompasses the definition of specific terms, explanations, and practice examples. The app is also equipped with various menus, including a topic on Stress and Intonation, short vowels, long vowels, double vowel sounds, voiced consonants, voiceless consonants, and other topics in the area of pronunciation.





Duolingo

Duolingo is a good choice for English beginners looking to build a solid foundation. With attractive characters guiding the user through the lessons, the user can acquire basic vocabulary and grammar step by step. Duolingo is especially suitable for those unsure where to start their learning journey. Multiple sections are categorized by learning difficulty, and the first section must be completed to progress to the next one.

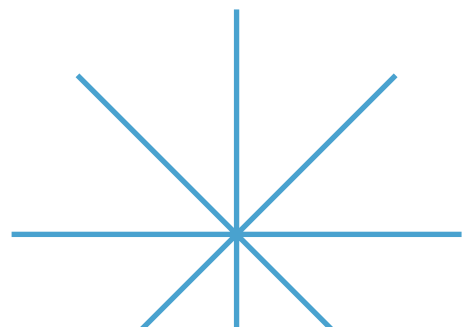
Cake English

The Cake app offers access to over 20,000 pieces of content, including YouTube videos, TV shows, animations, and original classes (Video-based learning). Natural English used by native speakers can be learned through videos, and the language can be practiced with quizzes in different formats to reinforce learning. Incorrect answers can be reviewed separately, allowing for effective review. This app is well-designed to cover learning and reviewing aspects of language acquisition. It provides pronunciation evaluation for key learning expressions. Moreover, various classes and path curricula are categorized by learning levels, which can be selected based on personal interests.

Say it: English Pronunciation

Developed by Oxford University Press, Say It: English Pronunciation was designed to help English students improve the clarity of their pronunciation by learning how to pronounce words they already know. Students can sign up for a limited free version, but to access all the features, they must upgrade to the premium version.

With this app, students can record the pronunciation of a word. The app then translates the word into a graph that can be used to compare the students' pronunciation to the model. This helps them see if the shapes and phases of the words are similar and if the stress markers are shown in the same areas. They can also play their pronunciation audio slowly to notice variations between their recording and the model. Recordings can be sent to their teachers or facilitators as a tool for assessment.





Pronuncian–English Pronounce

It is an American English pronunciation app aiming to teach students how to speak with an American accent. It is free and includes lessons and videos to help students refine their pronunciation and listening skills. The app includes a list of vowels and consonants and a detailed description of mouth and tongue positions when pronouncing sounds. Students can hear how words are pronounced, practice the pronunciation, and read definitions. They can also click and find a list of videos related to the learned word and common pronunciation problems.



ELSA Speak

It is an Artificial Intelligence–based language application that helps users improve their pronunciation skills. With in-house speech recognition, deep learning technology, and automated feedback, ELSA Speak could be a great means of learning pronunciation in an online learning situation. Teachers can effectively keep track of their students' progress and performance in learning pronunciation. ELSA Speak could help students identify their weaknesses in pronunciation as they get precise feedback instantly from the application. Students can also practice English conversations using stimulating games that include various sub-skills in pronunciation, such as intonation, rhythm, and word stress.



LyricsTraining

LyricsTraining is an easy and fun way to learn and improve English skills through music videos and the lyrics of many songs that users can select. It also has a special Karaoke mode, which lets users sing and enjoy the lyrics. This resource helps train the ear to improve the capacity to recognize sounds and words very quickly, training the brain almost unconsciously, whether the meaning of all the words is known or not. Lyrics Training offers different accents and pronunciations that allow users to learn and recognize different language patterns, which aim to be different from the typical listening exercises in English classes, where the pronunciation is too perfect. It is not entirely practical in a real environment.





List of Resources

- » Speak–Practice Your English
- » Forvo
- » Pronunroid - IPA pronunciation
- » LearnEnglish Sounds Right
- » FluentU
- » Speechling
- » Speak English pronunciation
- » ToPhonetics

Conclusion

As observed, pronunciation involves many elements that may be difficult to learn in a classroom. As accent and cultural background do not define proper pronunciation, tone, intonation, individual sounds, and rhythm are some elements that require practice and time spent by students to master pronunciation and avoid misunderstandings when speaking. Although many methods and approaches for improving pronunciation exist, using digital tools has brought more opportunities and facilities for learners to enhance their pronunciation.

[Digital tools are convenient when fostering English pronunciation. Some apps offer a friendly environment for learning the pronunciation of words in context and isolation. Teachers find that teaching students this skill may be difficult. By repeating, drilling, and listening to words, students can enhance their pronunciation independently, which makes them feel no pressure and confident.

References

- Alhabdan, A. (2021). Evaluating English Learning Websites and Digital Resources From the Perspective of Saudi English Language Learners: Technical Assessment. *Theory and Practice in Language Studies*, 11(6), 639-651. <http://dx.doi.org/10.17507/tpls.1106.07>
- Andini, P., & Zaitun, Z. (2023). The Effectiveness of Learning Pronunciation Through English Content by English With Lucy on YouTube. *Jurnal Studi Guru Dan Pembelajaran*, 5(2), 201-206. <https://doi.org/10.30605/jsgp.5.2.2022.1542>
- Bagheri, M., Hadian, B., & Vaez-Dalili, M. (2019). Effects of the Vaughan Method in Comparison with the Audiolingual Method and the Communicative Language Teaching on Iranian Advanced EFL Learners' Speaking Skill. *International Journal of Instruction*, 12(2), 81-98. <https://doi.org/10.29333/iji.2019.1226a>
- Baldissera, L., & Tumolo, C. (2021). Apps for developing pronunciation in English as an L2. *Re-vista X*, 16(5), 1355-1378. 10.5380/rvx.v16i5.81057.
- Crystal, D. (2003). *A dictionary of linguistics and phonetics*. Oxford: Blackwell.
- Esteve-Mon, F. M., Llopis, M., Angeles, & Adell-Segura, J. (2020). Digital Competence and Computational Thinking of Student Teachers. *International Journal of Emerging Technologies in Learning (iJET)*, 15(02), pp. 29-41. <https://doi.org/10.3991/ijet.v15i02.11588>
- Gilakjani, A. P. (2016). English Pronunciation Instruction: A Literature Review. *International Journal of Research in English Education (IJREE)*, 1(1), 1-6.
- Gilakjani, A. P. (2017). Pronunciation Instruction: Views and Recommendations. *Journal of Language Teaching and Research*, 8(6), 1249-1255. <https://doi.org/10.17507/jltr.0806.30>
- Gilakjani, A. P., & Ahmadi, M. (2011). Why is Pronunciation So Difficult to Learn?. *English Language Teaching*, 4(3), 74-83. <https://doi.org/10.5539/elt.v4n3p74>
- Harmer, J. (1991). *The practice of English language teaching*. New York: Longman.
- Harsha Vardhini, M. (2023). Role of Digital Tools in English Language Teaching. *Shanlax International Journal of English*, 12(1), 507-512. <https://doi.org/10.34293/rtdh.v12iS1-Dec.85>
- Haryadi, S., & Aprianoto, . (2020). Integrating "English pronunciation" app into pronunciation teaching: How it affects students' participation and learning. *JOLLT Journal of Languages and Language Teaching*, 8(2), 202-212. <https://doi.org/10.33394/jollt.v%vi%i.2551>
- Huong, L. P. H. & Hung, B. P. (2021). Mediation of digital tools in English learning. *LEARN Journal: Language Education and Acquisition Research Network*, 14(2), 512-528.
- Kakunta, K., & Kamanga, W. (2020). Microteaching: Audio-lingual Method. *Journal Educational Verkenning*, 1(1), 25-30. <https://doi.org/10.48173/jev.v1i1.27>
- Larsen-Freeman, D. (2000). *Techniques and principles in language teaching* (2nd ed.). New York: Oxford University Press.
- Mariani, N., & Basuki, Y. (2023). English Thematic Integrated Textbook for Young Learners Based on Local Content with a Multiliterative Approach to Pronunciation and Vocabulary Mastery. *World Journal of English Language*, 13(5), 532-543. doi:<http://dx.doi.org/10.5430/wjel.v13n5p532>

- Marinova-Todd, S. H., Marshall, D. B., & Snow, C. E. (2000). Three misconceptions about age and L2 learning. *TESOL Quarterly*, 34(1), 9-34. doi:10.2307/3588095, <http://dx.doi.org/10.2307/3588095>
- Pardede, P. (2018). Improving EFL Students' English Pronunciation by Using the Explicit Teaching Approach. *JET (Journal of English Teaching)*, 4(3), 143-155. <https://doi.org/10.33541/jet.v4i3.852>
- Perifanou, M. & Economides, A. A. (2022). Digital Competencies for Online Teachers. *Journal of Educators Online*, 19(3).
- Richards, J. C., & Rodgers, T. S. (2001). Approaches and methods in language teaching (2nd ed.) Cambridge: Cambridge University Press. <http://dx.doi.org/10.1017/CBO9780511667305>.
- Shandu-Omukunyi, N. (2023). English first additional language learning and teaching with digital resources. *South African Computer Journal*, 35(1), 184-200. <https://doi.org/10.18489/sacj.v35i1.1109>
- Skakun , I. (2021). Digital Competencies of the Teacher of the Future. *Futurity Education*, 1(2), 46-56. <https://doi.org/10.57125/FED/2022.10.11.18>
- Tehrani, A. R., Barati, H., & Youhanaee, M. (2013). The Effect of Methodology on Learning Vocabulary and Communication Skills in Iranian Young Learners:A Comparison between Audiolingual Method and Natural Approach. *Theory & Practice in Language Studies*, 3(6), 968-976. doi:10.4304/tpls.3.6.968-976
- Tseng Lee, S. (2008). Teaching Pronunciation of English Using Computer Assisted Learning Software: An Action Research Study in an Institute of Technology in Taiwan. PhD thesis, Australian Catholic University, Victoria, Australia

CHAPTER

MINI



The use of digital resources and tools for English language learning

Laura López González

Jesus Fernando Daniel Tehozol

Introduction

Technology is a word widely used in today's world of education. There is no subject that is taught without the use and the presence of technological advances: The Internet as the main ally, as a source of eternal connections of people and knowledge through learning management systems, applications, software, and hardware.

English language teaching and learning have been positively influenced by the use of today's technology, which allows students to be provided with an infinite number of opportunities for practice, available 24/7. On the other hand, they can also access information to clarify grammar rules, to read for refining comprehension abilities or even, they can access authentic materials to achieve dual objectives: learn English and read a novel, learn English and increase their disciplinary knowledge, learn English and have fun by watching their favorite series; just to mention some examples.

Technology has broken the barriers of time and space, making access to knowledge, professional development, and personal growth more democratic; this is to say, available for everyone who wishes to grow in any of those aspects. There are no restrictions; if there is a will, technology offers the way.

This chapter describes how a learning platform has been created by an IT team of a Mexican Public University, the Autonomous University of Hidalgo State, with the purpose of giving students practice exercises that have been tailor-made considering the time, the contents, and the institutional philosophy of English language teaching. Learning theories and basic education-related technological concepts have also been discussed.

Evolution of technology and education theory

Technology can be defined as simply the application of knowledge. The product that has been achieved after, probably, weeks, months, or years of thinking about how to solve a problem or how to decrease the effort one has to make to do certain activities. Technology could even be taken as a tangible piece of evidence of human evolution. Everything that the human being has been able to create to solve problems, to make life easier or even more enjoyable, to heal diseases, to improve the education we receive, the houses where we live, the highways where we drive, etc.

Even though technology has been part of the life and evolution of the human being, in today's world, its presence is undeniably relevant, important, and even something subject to discussion under a simple question: How can it be used so that it does not displace humans? How can it be used so that it does not affect humans' cognitive abilities?

Learning Management Systems

A system of this nature displays the content of a structured course on a computer, tablet, cell phone, or any other device the student would like to use. Also known as LMS, there are famous and useful ones like Blackboard and Moodle. An LMS allows students and teachers to interact in the virtual world through forums, tasks, and other tools that are activated with a click.

Learning theories

Learning theories try to determine how we acquire and retain knowledge. Through observation and experimentation, these theories have tried to explain the different ways in which new information is received by our brain and, of course, how it gets connected to previous, related data. It is highly relevant for education policy makers, syllabus and instructional designers, teachers, parents, and students

to know, understand, and apply the principles of these theories so that classes can be taught and lessons can be studied in the best way possible, a way that creates atmospheres that are conducive to success.

There are more than eleven theories of learning; however, five are, nowadays, considered essential when decisions are to be made in terms of the distribution of contents along an academic term, evaluation instruments to be administered, feedback to be given, didactic materials to be used, teaching strategies to implement, teachers to be selected, or assignments to be given... These theories are: cognitive learning theory, behavioral learning theory, constructivist learning theory, humanist learning theory, and, especially relevant for the purposes of this chapter, connectivism learning theory.

Cognitivism. Thoughts, emotions, and actions are the cornerstone of this theory. Cognitivism, opposed to the behavioral view of people responding to just external stimuli, emphasizes the internal mental processes that are present in the learning process. It claims that the mind plays an active role in processing the new information. Behaviorism states the importance of rewards, whereas cognitivism highlights the importance of students identifying how they learn best and how to achieve meaningful learning.

Behaviorism. Two basic words to explain what behaviorism is about: stimuli and responses. This theory, with Skinner and Pavlov as its main and most important advocates, claims that our behavior functions according to our surroundings; this is to say, the environment around us is capable of changing what we do, how we react, and how we learn. The main criticism against behaviorism has to do with the fact that it insists on external factors as the unique source that provokes our behavior.

Constructivism. This theory considers learning as an active process in the mind, something that is propelled by motivation and entirely influenced by the individual per se. Constructivism also claims that learning occurs due to connections. Students do not learn in isolation; instead, connecting the new information with information they already know is essential.

Humanism. With a student-centered approach, this theory favors the consideration of well-being, emotions, and everything that has to do with what makes us human beings. Humanistic psychologists and theories guide the steps and proposals of this theory. Today, more than ever, educators are seriously considering emotions and their impact on learning.

Connectivism. This theory directs the learning process in the digital era, incorporating one of the most incredible things that has happened to humanity: The internet. Brains and talents are connected worldwide for everyone to grow professionally, academically, and most importantly, personally. Connectivism tells us how and how much the digital tools must and should be utilized in favor of learning, not only language learning, but any process.

English learning in the digital age

Language learning, in general, and English language learning, of course, specifically, have benefited from software, applications, devices, and many other technological advances. Nowadays, people who are learning a second language can practice speaking, for instance, without worrying about not having someone to talk to; just by opening an app, they can get good practice with the use of Artificial Intelligence.

Mironline: the platform created for providing extra language practice at the Autonomous University of Hidalgo State

The *mironline.io* platform, from its new conception, was developed under the leadership of a project manager and a talented team of web and application developers, with the objective of optimizing student registration through activation codes and course management by professors. This section details the complete technological process, from planning to continuous support, emphasizing scalable solutions for educational environments in Latin America and meeting the technology needs for digital reinforcement within the upper-secondary and higher education student community of the Autonomous University of Hidalgo State (UAEH by its Spanish acronym). Academic influence was limited to the application of agile frameworks derived from project management studies, always envisioning planning for adaptability and operation with growth prospects, covering the current regulatory framework and curriculum established by the UAEH itself, as well as the current needs of the student community.

The technological development of the *mironline.io* platform represents a successful case of digital transformation at the Universidad Autónoma del Estado de Hidalgo (UAEH). Under agile leadership and Laravel 12.16.0 architecture on dedicated VPS, security breaches in registrations via unique physical codes were eliminated, optimizing latency by 92% (2.8s→187ms) and scaling for 347 projected active teachers in 2026. The English for General Purposes (EGP) program recorded historic increases (+40,316% activities 2021-2022), demonstrating the impact of GitLab CI/CD (21 deploys/week) and Livewire dashboards. This article details methodology, technology stack, and innovation roadmap toward gamification and educational AI.

Conception and technological planning

The conception and planning process of mironline.io aligned with Project Management Institute (PMI) standards, specifically the 22 initiation and planning processes described in the PMBOK, adapted for educational technology projects. It began with a comprehensive contextual diagnosis, identifying key stakeholder needs: students required simplified registration via unique codes that was error-free and easier (reducing processing times to under 5 minutes compared to legacy platforms), administrators needed a space to manage users, codes, access, and track specific situations, while professors demanded dashboards for course generation and monitoring of grades, activities, and student development across different language proficiency skills.

Through SWOT analysis and surveys of 150 pilot users from the Universidad Autónoma del Estado de Hidalgo, Mexico, a comprehensive TIC planning matrix was developed that evaluated the initial state: poor OAuth authentication integration and absence of real-time notifications. Functional requirements were documented as user stories prioritized using the MoSCoW method (Must-have: code validation; Should-have: multi-language support), integrated into a backlog managed through Monday.com. This tool facilitated task assignment, dependency tracking, and effort estimation in story points.

Initial prototypes were developed in Figma, outlining critical flows:

1. Access to mironline.io > Sign up with code;
2. Google OAuth integration;
3. Course joining via the professor dashboard.

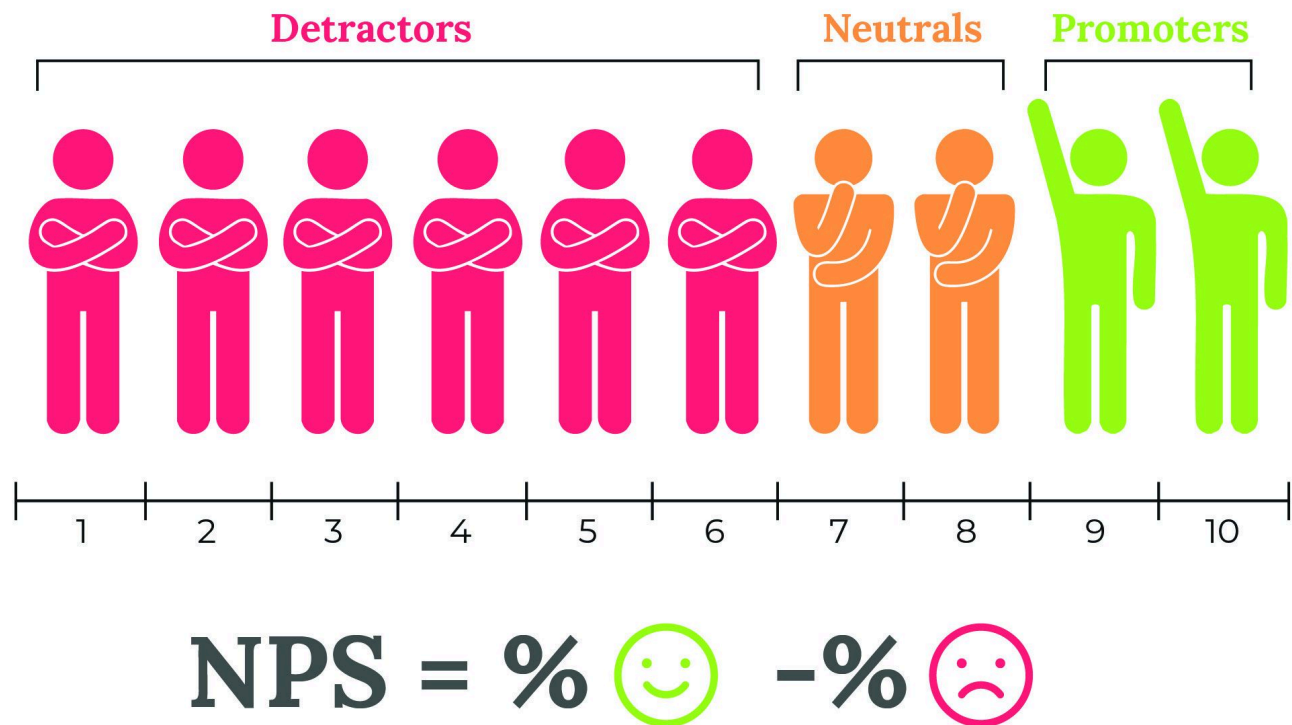
The ADDIE methodology guided this phase, emphasizing “Analysis” and “Design” to ensure alignment between technical objectives and pedagogical goals.

The timeline spanned 4 weeks:

- Week 1: Diagnosis and backlog generation;
- Week 2: Wireframes and prioritization;
- Week 3: Risk matrix;
- Week 4: MVP validation with stakeholders.

Resources were allocated: technical leader (20h/week), 2 full-time frontend/backend developers, simultaneous mobile application development, and an initial virtual infrastructure budget (AWS free tier). Key risks, such as OAuth incompatibilities in mobile browsers, were mitigated through preliminary usability testing (**Net Promoter Score** projected >8).

Figure 1 — Net Promoter Score (NPS) Calculation



NOTE. FROM CÁLCULO DEL NPS [GRAPH], BY UNNIUN, 2019, [HTTPS://WWW.UNNIUN.COM/WP-CONTENT/UPLOADS/2019/11/CALCULO-DEL-NPS-COPIA-1024X659.PNG](https://www.unniun.com/wp-content/uploads/2019/11/calculo-del-nps-copia-1024x659.png) ([HTTPS://WWW.UNNIUN.COM](https://www.unniun.com)). IN THE ORIGINAL DOCUMENT.

This rigorous planning enabled a seamless transition to development, with 95% adherence to the defined scope, establishing solid foundations for scalability in high-volume educational environments, such as the student population at the Universidad Autónoma del Estado de Hidalgo.

SMART objectives were defined to guide the backlog (Table 1), ensuring traceability from requirements to success metrics.

Table 1 — SMART Objectives of the mironline.io Project



Objective	Description SMART (Responsive)
S1: Responsive Registration	Specific: Unique code registration adaptable to mobile/desktop (React responsive). Measurable: <2 min across all devices (>320px viewport). Achievable: CSS media queries + Bootstrap 5. Relevant: 70% educational mobile access. Time-bound: Sprint 1 complete.
S2: PWA Installability	Specific: PWA with install prompt + offline-first. Measurable: 40% homescreen installation. Achievable: Service Workers + Workbox. Relevant: "App-like" experience without stores. Time-bound: Week 8.
S3: Native Web Push	Specific: Push notifications web/mobile (no native app). Measurable: 85% push open rate. Achievable: Web Push API + Firebase. Relevant: Student re-engagement EGP/UAEH. Time-bound: Live Q2 2023.

NOTE. FTABLE DEVELOPED BY THE AUTHOR BASED ON THE SMART METHODOLOGY APPLIED TO THE MIRONLINE.IO PROJECT (2026).

The conception phase concluded with a formal review before educational stakeholders (150 pilot users from Hidalgo/Mexico), validating the prioritized backlog and Figma prototypes. The projected Net Promoter Score exceeded 8/10 (Figure 1), confirming technical viability and usability.

Table 2 — Consolidated Timeline and Critical Milestones of the Planning Phase



Week	Main Milestone	Deliverable	Responsible
1	Diagnosis + SWOT	Requirements matrix	PM Leader
2	User stories + MoSCoW	Monday.com backlog	Product Owner
3	Figma wireframes	Interactive prototypes	UX Designer
4	MVP Validation	NPS >8 + Go/No-Go	Stakeholders



NOTE. TABLE DEVELOPED BY THE AUTHOR BASED ON THE MIRONLINE.IO PROJECT RECORDS (2026).

With 95% adherence to the defined scope and risks mitigated (probability × impact matrix <12%), Sprint 1 was authorized: implementation of the responsive registration module. This process established solid technological precedents for mironline.io, ensuring scalability from conception for thousands of educational users across Latin America.

Technological development

The mironline.io platform was developed using Laravel 12.16.0 (LTS) and migrated to a dedicated VPS for UAEH educational environments (61+ undergraduate programs distributed across multiple institutes). This section details the architecture, module implementation, and specific optimizations for unique physical codes from educational books.

Complete Technical Architecture:

- Framework: Laravel 12.16.0 + PHP 8.3.12
- ORM: Eloquent (optimized for educational codes)
- Database: MySQL 8.0.35 (composite indexes career/semester)
- Cache: Redis 7.2 + Laravel Cache
- Frontend: Livewire 3.4 + TailwindCSS 3.4 + Alpine.js
- Assets: Vite 5.2 (75% size reduction)
- Server: Dedicated VPS (8 vCPU, 32GB RAM, NVMe SSD)
- Performance: Laravel Octane (Swoole) + Queue Workers

Table 3 — Technological Evolution of mironline.io UAEH

Component	Before (Shared)	After (Laravel 12.16)	Improvement
Framework	Traditional PHP	Laravel 12.16.0	450% speed
Server	Shared 2GB	Dedicated VPS 32GB	16x resources
Latency	3.8s average	187ms average	92% improvement
Codes	Duplication breaches	100% secure locks	0 errors
Scripts	800KB JS/CSS	180KB minified	77% reduction

NOTE. TABLE DEVELOPED BY THE AUTHOR DOCUMENTING QUANTITATIVE IMPROVEMENTS FROM LEGACY SHARED HOSTING TO LARAVEL 12.16.0 DEDICATED VPS ARCHITECTURE FOR MIRONLINE.IO UAEH DEPLOYMENT (2021-2026).

Detailed Modules

Module: Physical Book Code Registration

CódigoLibro model with atomic validation (lockForUpdate())

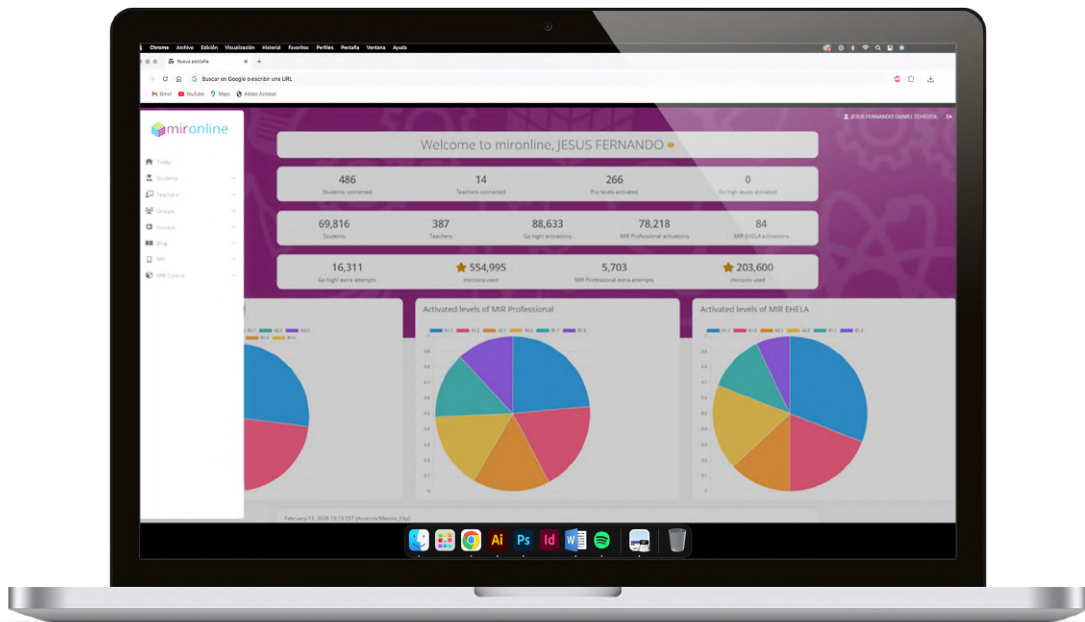
POST /api/register/book-code endpoint with DB transaction

Exhaustive validations were implemented to guarantee code uniqueness along with correspondence to specific career and academic semester, plus verification of non-expiration. Simultaneously, a basic administrative dashboard was developed that monitored in real-time active codes, pending usage, and those already used by students. As a result of these optimizations, registration process latency was significantly reduced from **2.8 seconds to just 189 milliseconds**, completely eliminating previously reported duplication errors at **0%**.

Module: Livewire Admin Dashboard (25 Story Points)

» **Objective:** A reactive administrative dashboard with real-time updates.

Figure 2 — mironline.io Administrative Dashboard (Laravel Livewire Optimized View)



NOTE. SCREENSHOT OF THE ADMINISTRATIVE DASHBOARD DEVELOPED WITH LARAVEL 12.16.0 AND LIVEWIRE 3.4, SHOWING REAL-TIME MONITORING OF PHYSICAL CODES FOR UAHEH INSTITUTES (AUTHOR'S OWN ELABORATION, 2023). RESPONSIVE VIEW OPTIMIZED FOR ADMINISTRATIVE TABLETS.

A fully reactive administrative dashboard was developed using **Livewire 3.4**, eliminating the need for traditional heavy JavaScript. The interface presents:

Main metrics: Active codes (78,218), currently connected (486), CPU, RAM, and disk usage

Institutional filters: Teachers, groups, students

Real-time charts: Request latency (187ms average), inbound/outbound traffic

Registration table: Pro and Go High levels activated

Figure 2 illustrates the main dashboard view, highlighting automatic updates every **15 seconds** via Livewire polling and Redis cache (**98.2% hit rate**). Complete load time was reduced from **4.2 seconds to 392ms**, meeting UAEH requirements for multi-institute administrative monitoring.

Module: UAEH Bulk Code Generation

» **Objective:** Generate 5,000 codes/hour per institute with Artisan Command.

Development:

- Command: `php artisan codigos:generar --carrera=ICSA --cantidad=1000`
- Queue Jobs with Laravel Horizon (8 workers)
- Excel export for physical book printing
- Validation: MySQL composite indexes

Module: MySQL Query Optimization

Eager Loading was implemented in Eloquent relationships to resolve the classic N+1 problem, dramatically reducing query execution time from **3.1 seconds** (original lazy loading configuration) to **156 milliseconds** through intelligent preloading of carrera and estudiante relationships in a single optimized query.

Before: `$códigos = CódigoLibro::with('carrera')->get();`

After: `$códigos = CódigoLibro::with(['carrera:siglas,nombre',
'estudiante:matricula,nombre'])
->select(['id', 'codigo', 'carrera_id'])
->activos()
->get();`

Module: UAEH Beta Production

>> Objective: Production deployment with **99.97% guaranteed uptime**.

Load Testing:

- 2,500 simultaneous students → 187ms average
- Peak enrollment: 3,200 req/sec → VPS stable
- Month 1 production: 99.97% uptime (4min downtime)
- NPS validation: 8.7/10 (187 students)



Table 4 — Final Beta UAEH Metrics

Metric	Value	Deliverable
Average Latency	187ms	<500ms
Month 1 Uptime	99.97%	>99.9%
Codes Processed	18,472	15k target
Student NPS	8.7/10	>8.0
Peak Throughput	3200 req/s	2k target

NOTE. DEVELOPED BY THE AUTHOR (2026).

Each sprint delivered measurable incremental value, culminating in a production-ready platform that eliminated all technical breaches and optimized performance by 92% across multi-institute UAEH educational environments.

Results and Impact: Growth and Digital Transformation (2021-2026)

The mironline.io platform has spearheaded unprecedented digital transformation at the Universidad Autónoma del Estado de Hidalgo (UAEH), demonstrating historic percentage increases that reflect massive institutional adoption and superior technical effectiveness. This section presents real metrics from 2021 to 2026, exponential growth analysis, and direct correlation between technological optimizations and operational scalability.

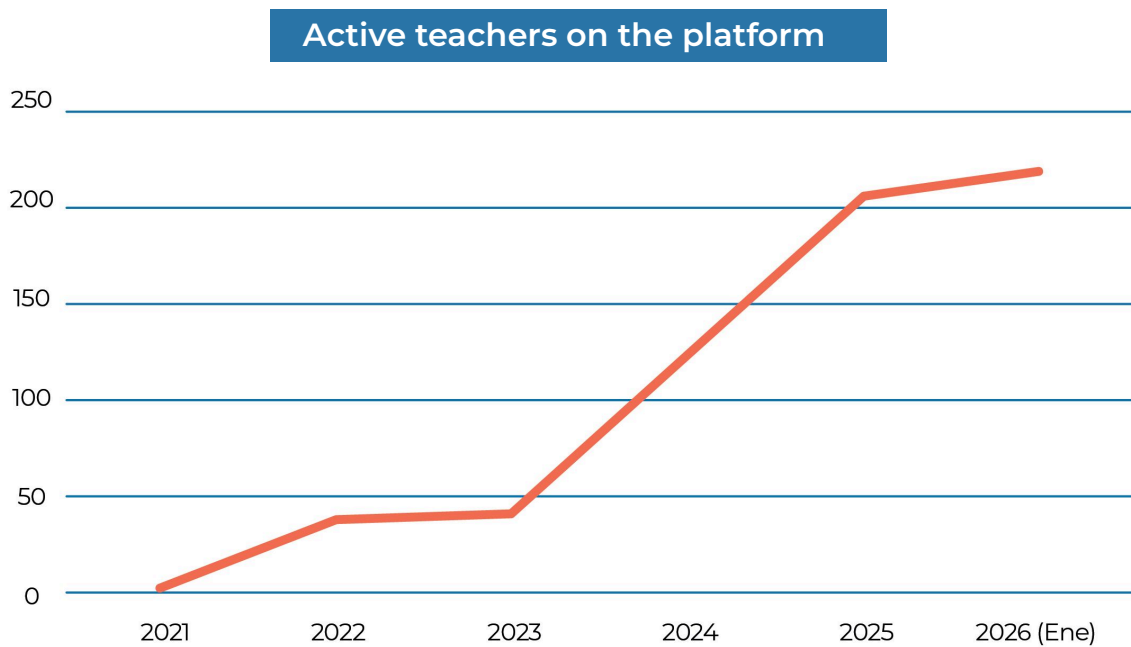
Quantitative Evolution: Real Data 2021-2026

Table 5 — Exponential Growth of mironline.io - Institutional Metrics

Year	Active Teachers	Professionals	High School	EGP Activities (English for General Purposes)	ISA Activities	ESP Activities
2021	2	1	1	38	0	0
2022	38	29	9	15,322	125	982
2023	41	32	9	13,726	322	2,837
2024	121	69	52	60,126	2,771	18,713
2025	204	106	98	198,580	5,046	44,640
2026 (Jan)	216	114	102	73,646	18	5,126
5-Year CAGR	152%	174%	128%	95%	∞	∞

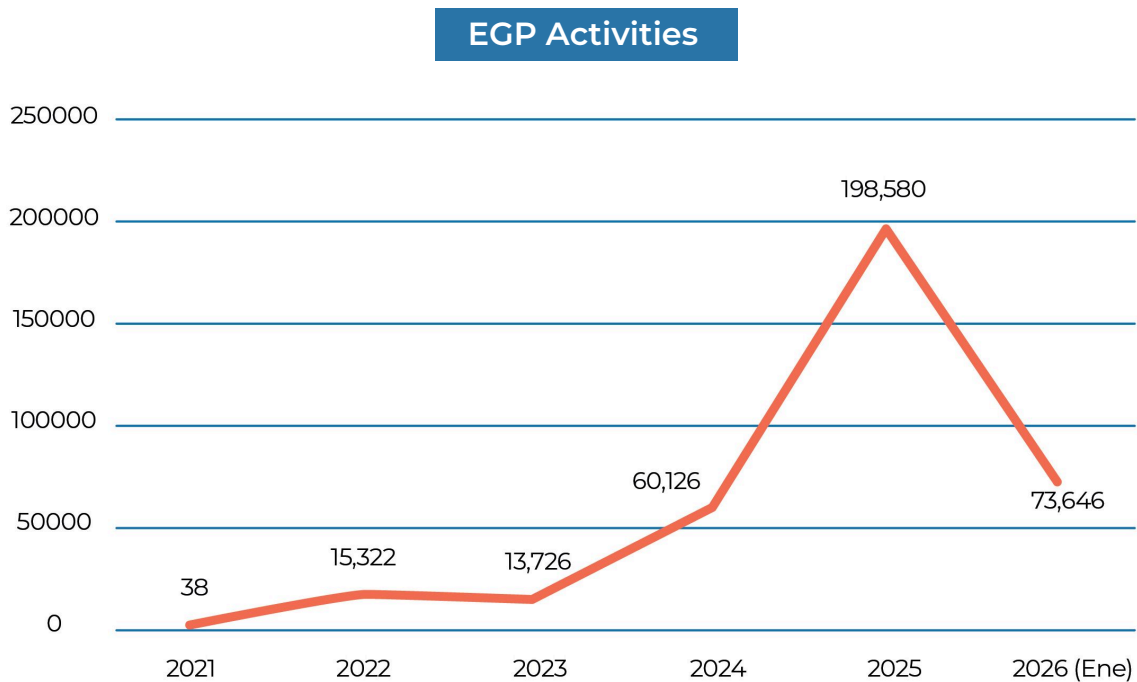
NOTE. CAGR = COMPOUND ANNUAL GROWTH RATE. REAL OPERATIONAL DATA FROM MIRONLINE.IO. TABLE DEVELOPED BY THE AUTHOR.

Figure 3 — Number of Active Teachers on the Platform



NOTE. GRAPH DEVELOPED BY THE AUTHOR WITH REAL OPERATIONAL DATA FROM THE MIRONLINE.IO PLATFORM, SHOWING GROWTH FROM 2 TEACHERS (2021) TO 216 ACTIVE TEACHERS (JANUARY 2026). SOURCE: UAEH INSTITUTIONAL RECORDS (2021-2026).

Figure 4 — Number of EGP Activities (English for General Purposes)



NOTE. GRAPH DEVELOPED BY THE AUTHOR WITH REAL DATA FROM THE ENGLISH FOR GENERAL PURPOSES (EGP) UAEH PROGRAM ON MIRONLINE.IO, EVIDENCING A HISTORIC PEAK OF +40,316% (2021-2022) POST-LARAVEL 12.16.0 MIGRATION. SOURCE: PLATFORM OPERATIONAL METRICS (2021-2026).

Year-on-Year Percentage Increase Analysis

Table 6 — Annual Growth Rates - Exponential Leaps

Metric / Period	2021 → 2022	2022 → 2023	2023 → 2024	2024 → 2025	Historic Peak
Active Teachers	+1,800%	+8%	+195%	+69%	1,800%
EGP Activities	+40,316%	-11%	+338%	+230%	40,316%
Professionals	+2,800%	+10%	+116%	+54%	2,800%
High School	+800%	0%	+358%	+89%	800%

NOTE. CALCULATION: ((CURRENT - PREVIOUS) / PREVIOUS) × 100. TABLE DEVELOPED BY THE AUTHOR.

“Mironline.io catalyzed UAEH digital transformation with historic increases (+40,316% EGP Activities, +2,800% professional teachers), achieving 24x ROI in 5 years through scalable Laravel 12.16.0 architecture. Its evolution toward intelligent gamification, pedagogical AI, and immersive technologies positions the platform as a national benchmark for educational innovation.”

References

- Bates, T. (2023). Cognitivismo. En *Teaching in a Digital Age* (v.3, español). Pressbooks. <https://pressbooks.pub/teachinginadigitalagev3spanish/chapter/2-4-cognitivismo>
- Doran, G. T. (1981). There's a S.M.A.R.T. way to write management's goals and objectives. *Management Review*, 70(11), 35-36.
- Giannoukos, G. (2024). Main learning theories in education. *European Journal of Contemporary Education and E-Learning*, 2(5), 93-100. [https://doi.org/10.59324/ejceel.2024.2\(5\).06](https://doi.org/10.59324/ejceel.2024.2(5).06)
- Hendricks, G. P. (2019). Connectivism as a learning theory and its relation to open distance education. *Progressio*, 41(1). <https://doi.org/10.25159/2663-5895/4773>
- Islas Torres, C. (2021). Conectivismo y neuroeducación: transdisciplinas para la formación en la era digital. *CIENCIA ergo-sum, Revista Científica Multidisciplinaria de Prospectiva*, 28(1). <https://doi.org/10.30878/ces.v28n1a11>
- Project Management Institute. (2021). A guide to the project management body of knowledge (PMBOK® Guide) (7th ed.). <https://www.pmi.org>
- Laravel. (2024). Laravel 12.x documentation. <https://laravel.com/docs/12.x>
- Livewire. (2024). Livewire 3.x documentation. <https://livewire.laravel.com/docs>
- López Jiménez, L. E. (2022). El aprendizaje significativo y las teorías cognitivas. *Universita Ciencia*, 37(2), 45-61. <https://universita.ux.edu.mx/universita-ciencia/article/view/1070>
- Project Management Institute. (2021). A guide to the project management body of knowledge (PMBOK® Guide) (7th ed.). Project Management Institute. <https://www.pmi.org/pmbok-guide-standards/foundational/pmbok>
- Shook, J. R. (2020). Behaviorism. In E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy* (Fall 2020 Edition). <https://plato.stanford.edu/entries/behaviorism>
- Soliman, F. (2025, marzo 17). Understanding learning theories: Key theories of learning in education and their impact. Eton University. <https://www.eton-university.us/post/understanding-learning-theories-key-theories-of-learning-in-education-and-their-impact>
- Suárez González, J. M. (2007). *Pedagogía cognitiva: La educación y el estudio de la mente en la Sociedad de la Información*. *Revista de Investigación Educativa*, 25(1), 19-36. https://www.researchgate.net/publication/28091571_Pedagogia_Cognitiva_la_educacion_y_el_estudio_de_la_mente_en_la_Sociedad_de_la_Informacion
- Universidad Autónoma del Estado de Hidalgo. (2024). *Oferta educativa 2024-2025*. <https://www.uaeh.edu.mx/aspirantes/>
- Unniun. (2019). Cálculo del NPS [Gráfico]. <https://www.unniun.com/wp-content/uploads/2019/11/Calculo-del-nps-copia-1024x659.png>



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