

## **Supporting Diversity in CALL Settings: A Study of Teacher Trainers' Perceptions and Practices**

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### **Abstract**

Inclusive education in language learning and teaching is nowadays seen as difficult and even impractical. Although legislative and educational systems require inclusive practices to be adopted and embedded within pedagogy, neutral and even negative attitudes and practices toward students with disability are a common trend among language teachers in numerous countries. Likewise, the role of diversity, inclusion and individual differences in computer-assisted language learning (CALL), which has been shown to have the potential to enhance students' language learning, has been scarcely explored, especially concerning teacher trainers' perceptions. In this light, this qualitative study explores the attitudes towards attention to diversity and inclusion within CALL held by Spanish Higher Education language teacher trainers ( $n = 5$ ). Findings show that participants tend to use technology to improve students' learning but also to address diversity through CALL, especially by promoting independent work and personalizing learning through adapted materials adjusted to cognitive levels and additional time. Moreover, classroom observation seems to be the best method to understand learners' preferences, readiness and necessities, according to participants. Ultimately, this study shows that teacher trainers believe that CALL can effectively address learner diversity by providing personalized learning experiences tailored to individual needs, preferences, and learning paces.

**Keywords:** Computer-assisted language learning (CALL), Universal Design for Learning (UDL), Attention to diversity, Teacher training, Qualitative research

## **Introduction**

As the field of computer-assisted language learning (CALL) continues to evolve (Barjesteh & Isaee, 2024; Ghufron & Nurdianingsih, 2021), the need for inclusive approaches that address the diverse needs of language learners is nowadays unavoidable. Although scientific literature highlights that CALL can constitute an interesting tool for attending to diversity (Fernando, 2023), inclusive teaching practices in CALL require educators to be trained to navigate linguistic, cultural, and individual differences, and ensuring that all students have the opportunity to succeed (Fernando, 2023; Greene, 2013).

Regarding how inclusion and diversity can be addressed from an educational perspective, it is worth mentioning Universal Design for Learning (UDL), which has acquired significant relevance today as education increasingly focuses on inclusivity and accessibility for diverse learners. Aiming to offer flexible learning environments adapted to individual learning differences, UDL ensures that all students, regardless of ability, can engage with content through multiple means of representation, expression, and engagement (Rose et al., 2006). In this sense, research has shown the viability of combining UDL and CALL to support language learning and help students with difficulties, enhancing inclusive practice by increasing access to textual meaning and language input (Kasch, 2021a, 2021b). Nevertheless, research has not yet explored in depth the potential of combining CALL and UDL.

Despite the growing recognition of the importance of diversity and inclusion in language education, there remains a significant gap in research exploring how language teacher trainers, particularly in Higher Education Institutions (HEIs), perceive and address these challenges. Considering this, this paper aims to explore and compare the attitudes towards attention to diversity and inclusion within CALL held by language teacher trainers to shed light on its current practices, potentialities and challenges in Spanish HEIs. As diversity and inclusion are broad concepts, the paper focuses on students with special educational needs or specific educational support needs (SEN), as providing personalized teaching to these learners tends to constitute a challenging task for teachers (Nilsen, 2018; Saloviita, 2020). To do so, five language teacher trainers with over 10 years of experience teaching are asked to share their views on how they integrate technology into their language lessons, how they attend to

diversity, and how they think technology can help them attend to diversity in language lessons. Such information will allow an understanding of how teacher trainers use CALL to attend to diversity, as well as identify potential recommendations for universities and teacher training centers.

This study uses a qualitative research framework, incorporating a descriptive, cross-sectional, and correlational approach, aiming to answer the following research questions:

RQ1: How do language teacher trainers include technology in their lessons? This research question is formulated with the aim of gathering preliminary information about how language teacher trainers integrate technology within their teaching in order to provide learners with opportunities to experience CALL.

RQ2: How do language teacher trainers attend to diversity in their lessons? This research question is formulated with the aim of gaining preliminary information about how language teacher trainers respond to students' multiple forms of diversity when teaching.

RQ3: What is the potential of technology to attend to diversity in CALL settings, according to language teacher trainers? This research question is formulated with the aim of understanding how language teacher trainers believe technology can help them to attend to diversity when implementing CALL.

This research is closely aligned with the broader discussion surrounding inclusive CALL, as it explores not only the strategies that trainers employ to ensure all students can engage with content and participate in discussions, but also how they differentiate instruction to meet varied student needs and create respectful, welcoming classroom environments. Additionally, the study delves into how teacher trainers assess and adapt the CALL curriculum to accommodate diverse learning profiles and how they foster a culture of peer support, collaboration, and multicultural understanding. In sum, it aims to shed light on the current practices and attitudes of language teacher trainers in Spanish HEIs regarding diversity and inclusion in CALL, providing valuable insights for educators and researchers alike as they work towards creating more inclusive language learning environments.

### **Review of Literature**

Attention to diversity and the integration of SEN students are two of the main challenges in language education (Arigita, 2016; Huertas-Abril, 2021). It must be noted that integration and attention to diversity in the educational context consists of adapting the lessons to address the learning difficulties presented by the student, in order to meet their SEN (Silva, 2007). In fact,

attention to diversity is an essential requirement for numerous institutions and in many educational contexts, since all students must be attended to and educated equally, regardless of their personal characteristics or conditions; and this attention must be of quality (Díez & Sánchez, 2015).

Inclusive education in the context of language learning and teaching, specifically in English as a Foreign Language (EFL), is nowadays seen as ‘problematic’ (Effendi et al., 2024). Research shows that inclusive EFL practices are considered difficult (Smith, 2006), and even impractical (Rezaei et al., 2018). Despite the fact that legislative and educational systems require inclusive practices to be adopted and embedded within pedagogy (Hallett & Hallett, 2010), neutral and even negative attitudes and practices toward students with disability are a common trend among EFL teachers in numerous countries, including Bangladesh (Islam & Ahsan, 2022), Saudi Arabia (Abduljalil Alabsi, 2021), Serbia (Savić & Prošić-Santovac, 2017), Turkey (Aksu Ataç & Taşçı, 2020), or the United Kingdom (Smith, 2006).

Among the different ways teachers may use to identify and respond to the needs of their students is observation, which allows giving learners what they need and ultimately improving their educational process (Benetou, 2015). However, CALL may also offer great potential in this respect. CALL, understood here as any application of technology in language teaching and learning (Tafazoli et al., 2018), encompasses a wide range of areas related to instructional strategies and educational innovations, making it a relevant issue within language education (Beatty, 2013), and can be especially interesting when attending to diversity (Fernando, 2023). As highlighted by Gillespie (2020), CALL is now seen as an international discipline, and research in the field emphasizes the potential of this approach to enhance students’ language learning process, particularly in EFL environments (Barjesteh & Isaei, 2024; Ghufroon & Nurdianingsih, 2021; Habibi et al., 2019; Tuzahra et al., 2021). Nevertheless, the role of diversity, inclusion and individual differences in CALL, such as learning styles and preferences, has been scarcely explored so far (Fernando, 2023; Pawlak, 2022). There is also a need to address the language bias in CALL research, which usually neglects learners’ plurilingual skills, and to explore how CALL can support the use of all the potential languages learners may know in language education (Buendgens-Kosten, 2020). These studies collectively underscore the importance of considering diverse learner needs and linguistic backgrounds in the design and implementation of CALL programs (Abbasi, 2022).

Among the benefits of technology-based tools for attending to diversity, several ideas can be highlighted. On the one hand, they promote independent work and personalized learning among students (Mohammadi-Zenouzagh et al., 2023; Shapauov et al., 2023; Weng & Chiu,

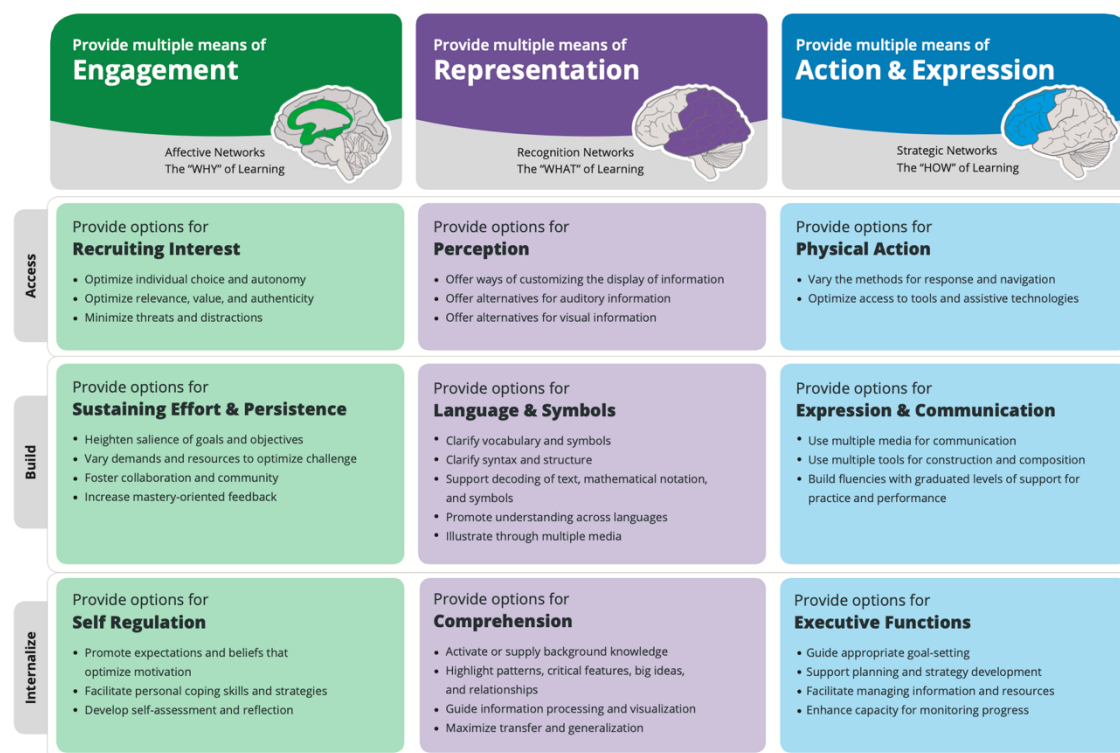
2023). Moreover, these tools may also help teachers offer immediate feedback and design interactive and dynamic lessons (Hafour, 2022; Wang, 2024). Likewise, they have the potential to foster collaboration (especially considering its power to support inclusive education; Perlado et al., 2021) and accessibility and create inclusive learning environments for all students (Haleem et al., 2022; Stenman & Pettersson, 2020).

Of particular interest in relation to CALL is Collaborative Online International Learning (COIL). This teaching approach connects students and teachers from different countries to collaborate on shared projects and learning activities through online platforms, fostering cross-cultural understanding and global perspectives (Huertas-Abril & Palacios-Hidalgo, 2024). Among the different ways that COIL can be implemented is eTwinning, a platform for European schools to collaborate on this type of projects (European School Education Platform, n. d.). In any case, both COIL and eTwinning have the potential to foster language skills, cultural understanding, and the development of digital skills among learners (Huertas-Abril & Palacios-Hidalgo, 2023, 2024; Sánchez-Ruiz & López-Cirugeda, 2024).

A potentiality of CALL to attend to diversity can be the implementation of UDL in language education. UDL stands out as a valid and scientifically based model (Rose et al., 2006) to guarantee equal learning opportunities for all students. UDL, based on the principles of Universal Design in architecture, was firstly used by Ronald L. Mace, who defined it as follows: “Universal Design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design” (Mace, 1985, as cited in Dolph, 2021, p. 181). Applied to (language) education, UDL views learners as unique and diverse in their needs, challenging the notion that all students learn in the same way and critiquing the design of education for an ‘ideal’ student (Meyer et al., 2014). This approach is crucial for HEIs, as it defends that variations in student needs are the norm rather than the exception, reversing the traditional approach to accommodations (Singleton et al., 2019). By offering multiple methods of engagement, representation, and expression (see Figure 1), UDL normalizes the diverse needs of students. Consequently, both students with and without disabilities are given opportunities to participate in the language classroom, with their varied needs acknowledged and addressed (Taylor et al., 2021).

**Figure 1**

*UDL Guidelines (CAST, 2018)*



As shown in Figure 1, UDL is a way to enhance teaching effectiveness and quality training for diverse learners. It is grounded in neuroscientific principles of human learning and offers substantial flexibility in accessing materials, engaging with content, and demonstrating learned knowledge. Consequently, the principles of UDL can be successfully implemented in language education to address varied learning needs and improve language teaching (Sharafutdinova, 2024), as they can certainly help teachers adjust to the diverse needs of their learners (Kasch, 2021a, 2021b).

Considering the above, and despite the potential of CALL for attention to diversity elucidated here, especially when connected to UDL, the literature in this field is still limited with regard to the attitudes and perceptions of teacher trainers. In this context, this paper aims to contribute to narrowing this research gap by exploring and comparing the attitudes towards attention to diversity and inclusion within CALL held by language teacher trainers in Spanish HEIs.

## **Method**

### **Research Design**

This study follows a qualitative research design to explore the attitudes of language teacher trainers at Spanish HEIs on the potential of CALL for attending to diversity in the language classroom. Data is gathered through semi-structured interviews, a method widely recognized for its possibilities to elicit rich, detailed insights into participants' experiences (Bearman, 2019). Moreover, the open-ended nature of the questions in the interviews encourages participants to elaborate on their thoughts, facilitating the exploration of complex perspectives (Carey et al., 1996). Data are then analyzed using content analysis, a robust approach for identifying patterns and themes in qualitative data (Bardin, 2013). This design ensures that the study captures the complexity and diversity of participants' opinions in a meaningful way.

### **Participants**

A convenience sample was recruited from Spanish HEIs. It must be noted that the researchers also used a purposive sampling process, considering its benefits in qualitative research, as "What would be "bias" in statistical sampling, and therefore a weakness, becomes the intended focus in qualitative sampling, and therefore a strength. Studying information-rich cases yields insights and in-depth understanding rather than empirical generalizations" (Patton, 2007, p. 1).

Participants were invited to participate in the study if they met the following criteria: they were language teachers, they were teaching EFL and/or language pedagogy in Spanish HEIs during the academic year 2023-24, and they usually use CALL in their language lessons. Prior to collecting any data, all participants were informed about the objectives of this research and gave their explicit consent to participate in the study. Five participants were finally selected for this research, and their names have been anonymized and changed to fictitious names. Among them, four participants identified as female (Carmen, Francisca, Paula, and Sara), while one identified as male (David). All of them have over 10 years of experience teaching languages and/or language pedagogy in HEIs. Table 1 shows the demographic information of the study's participants.

**Table 1**

*Participants' Demographic Information*

<b>Name</b>	<b>Gender</b>	<b>Teaching areas</b>	<b>Teaching experience</b>
Carmen	Female	EFL, EFL didactics, bilingual education	24 years
Francisca	Female	EFL, EFL didactics, bilingual education	16 years
Paula	Female	EFL, EFL didactics, bilingual education, technology in EFL	13 years
Sara	Female	EFL didactics, bilingual education	20 years
David	Male	EFL, EFL didactics	12 years

This research adheres to the highest ethical standards, placing a strong emphasis on safeguarding participants' rights and well-being. Ethical considerations were embedded throughout every phase of the study, from its design and implementation to the analysis of data. First, written informed consent was secured from all participants, who were thoroughly informed about the study's purpose, procedures, and any potential risks or benefits. Second, participation was entirely voluntary, with no coercion involved, and participants were made aware of their right to withdraw at any point. Third, all data were collected with strict confidentiality, ensuring anonymity by removing all identifiable information.

The study is conducted in accordance with the Declaration of Helsinki and the Code of Responsible Practices and Integrity in Research at the University of Córdoba (Spain): Código de Prácticas Responsables e Integridad en la Investigación de la Universidad de Córdoba, published on December 12, 2015 (no. 2015/00559), Acuerdo de Consejo de Gobierno, en sesión ordinaria de 18/12/2015, por el que se modifica el Código de Prácticas Responsables e Integridad en la Investigación de la Universidad de Córdoba, aprobado en Consejo de Gobierno de 20/12/2013 (Available at: <https://bit.ly/ucoethics>).

**Data Collection**

Semi-structured interviews were conducted to gather data, consisting of demographic data and five questions addressing the integration of CALL in the participants' lessons, attention to diversity, identification of students' needs, and how technology may facilitate or not attention



to diversity and inclusion in their teaching performance. These interview questions served as the guiding framework for developing the deductive coding frame used in data analysis. The interviews' questions were the following:

1. How do you integrate technology into your language lessons?
2. How do you attend to diversity in your language lessons?
3. How do you identify your students' learning difficulties?
4. Have you ever had any SEN students? Please, share your experience.
5. How do you think technology can help you attend to diversity in your language lessons?

### **Data Analysis**

Data analysis was conducted by applying qualitative content analysis, for which the researchers used the software Atlas.ti v. 23 for Windows. The data obtained from the semi-structured interviews were analyzed and coded into codes and categories (i.e., groups of codes). The categories built are primarily substantive to describe participants' concepts and beliefs (Maxwell & Chmiel, 2014). Regarding the descriptive-analytical phase, the data were coded twice, based on the coding frame identified previously. The two versions of the coding phase were compared, showing a 95% concordance between them, and then having the resting 5% agreed by the researchers. Finally, interpretation, the final phase, was carried out by using an inductive approach in order to identify and create connections among the different codes and groups of codes.

### **Findings**

A total of four categories were obtained after the content analysis of participants' responses, namely: (i) use of CALL in language lessons; (ii) methods to attend to diversity; (iii) actions when identifying SEN students; and (iv) potential of technology for attention to diversity and inclusion in CALL settings.

#### **Use of CALL in Language Lessons**

This first category includes themes related to the use of different technological tools that participants stated. Participants mentioned that they use different technological tools when teaching EFL to provide their students with opportunities to work autonomously and give additional time for those who need it, as highlighted by Sara, technology "is an excellent way

to encourage self-learning and for each student to regulate their own work.” This is also related to the idea that these tools are useful means to provide students with immediate feedback on the different language points they are practicing in the class. As Paula puts it,

I include diverse technological tools. It depends on what class I teach and on what subject I teach. If I teach EFL, I try to use various websites that help to practice like given grammatical points or language skills. The websites that I use are for independent study, which give students immediate feedback on their correct answers or wrong answers. (Paula)

On another note, participants mentioned that they tend to rely on digital tools and platforms that follow game-based learning, such as Quizizz or Kahoot!, so as to try to make their lessons as interactive and dynamic as possible. In this sense, David claims that they often implement these types of activities as a kind of revision of previously studied content: “We sometimes do it at the students’ pace, so they access a battery of questions, answer them and at the end we go over the questions together to make sure there are no doubts” (David).

In the same vein, some of the participants also pointed out the idea of using technology to provide language learners with opportunities to practice language and communicative skills and to reinforce those areas in which they have more difficulties. They considered that technology offers a wide range of tools that can be shared with language learners to practice the grammar and vocabulary they struggle with always “according to their cognitive level” (Sara).

Apart from common uses of technology such as “submission of tasks onto the course’s virtual environment” (Francisca), one of the participants also highlighted that the use of technology in EFL lessons also gives “the possibility for the students who are absent to practice at home,” which is an important aspect to consider “so they don’t miss what has been seen in class” (Paula).

Some of the participants mentioned that they try to integrate technology in their EFL lessons through the design of innovation and Collaborative International Language Learning projects. For instance, David acknowledged that they have technology “quite integrated [in their EFL lessons] as we organize innovation projects every year, and almost all of them are related to a specific use of technology.” In the same line, Carmen and Francisca mentioned the specific use of eTwinning projects in their lessons, a type of COIL project between teacher training HEIs that uses a platform funded and supported by the European Commission

(Huertas-Abril & Muszyńska, 2022). These two participants defend that eTwinning projects are a clear way to integrate technology in students' language learning process:

[In the courses] we use eTwinning projects, working with the new ESEP [European School Education Platform] and Twinspace to engage students in collaborative projects with peers from different countries. This enhances their language skills, broadens cultural understanding, and improves digital skills. And Twinspace also allows real-time communication and the sharing of ideas, making learning dynamic and interactive. And also, by participating in these projects, students develop critical thinking and problem-solving skills. (Francisca)

In connection with this idea, the participating teachers also revealed that they tend to ask their students, as future language teachers, to use the different technological tools they have previously seen in class to design their own online teaching materials that they could use in a real lesson. For instance, in the case of David, "students had to prepare digital games to practice grammar and vocabulary topics [...] that could be used at any time and when they become teachers in the future."

In short, participants agreed on the fact that their main aim to integrate technology in EFL lessons was to "connect with their training and with their future teaching profession" (Carmen).

### **Methods to Attend to Diversity**

When referring to how they attended to diversity, participants shared a variety of ideas. The most repeated aspect was observation, as the interviewed teachers considered it constitutes the best way to identify learners' needs:

First of all, [I identify students' needs] by observing my class and what the students' preferences are, even if subtle, if unsaid, unmentioned, just observing their reactions and also what they are ready for. And then I adopt the tools that I use for the purposes of the class and what students are ready for. Sometimes the students are not ready for all that I would have to give, so I wait, and I implement different materials in

the meantime and maybe provide like an introductory phase for using some tools. (Paula)

The observation of students goes hand in hand with the information provided by the SEN units of universities, as indicated by participants. Such units are in charge of elaborating reports with guidelines and recommendation on how to work with those university students with any type of SEN and then sharing them with teachers, which is useful according to the interviewees:

We have a special unit for students with disabilities at our university. So students are the ones who have to contact this unit and then they inform you [the teacher] and tell you if you have to make some kind of adaptation, whether it be curricular, temporary, organizational... (Francisca)

In some cases, speaking directly with students also helps, as indicated by some of the participants, since this is a good way to ask the students directly “how best to deal with their specific situation” (Sara). In any case, however, participants also considered very important to connect emotionally with learners so that they feel safe enough to share their own thoughts and needs. This is clearly exemplified with Paula’s response:

Special needs students often have avoidance strategies and they’re a little bit defensive, afraid to fail the exam. A lot of emotions there. So, I would say that I first cater to their emotional well-being as a teacher and then, when I have them and when they trust me, I can start by opening up a little bit and suggesting various tools to help them learn more effectively when they are already not afraid of learning. So first emotions in that case, and then support. (Paula)

All participants agreed on the idea that providing students with opportunities to choose their learning path is essential to attend to the diversity of their EFL classes. In this sense, they considered useful to “give a choice of different tasks and materials to students, encouraging them to choose their own learning path” (Paula). In relation to this idea, the interviewed teachers also thought giving voice to learners is a good way to make them feel heard and

included, asking them “what they might want to do and how they learn or want to learn” (Paula).

The use of cooperative learning techniques was also mentioned by the participants, as these is a way to give opportunities for all students to work equally and make them feel more “protected” (Sara).

We work in groups, as [the students] have to do a lot of practical work, because the idea is that it should be as practical as possible. So they work in groups and they are quite well organized because they identify their strengths and weaknesses. (Francisca)

Some of the participants also pointed out the fact that they sometimes have assistant professionals in class who help the students with SEN, the importance of learning new methods to attend to diversity themselves, and the importance of giving learners the course materials in advance. In short, they agreed on the idea that they, as teachers, need to create inclusive classroom environments so that all students “are comfortable in the classroom, that everyone feels important, that they are included” (Sara).

### **Actions When Identifying SEN Students**

Regarding the different actions that the surveyed teachers carry out once they have identified the SEN of their EFL students, the participants shared five ideas. On the one hand, they considered that looking at the students’ specific learning difficulties was essential so as to then adapt their teaching and the resources they provided them with. On the other hand, they also believed that analyzing special necessities with regards to the target language was key considering their relevance in language lessons. In this sense, Paula claimed the following when asked how they identify the learning difficulties that their students may have:

In language classes, it’s quite easy, I would say, to identify some students who may have difficulties with certain language skills like listening, for example. They may have problems understanding various accents, the pace of speaking, or the language in general. They might have like microdifficulties in the brain when analyzing the language. And then it becomes very difficult for them to speak as well because they cannot process the language. Apart from that, there are also

difficulties in terms of learning strategies linked to learning language skills. (Paula)

Moreover, participants thought that making use of standardized and progress tests could be a good way to identify the necessities of learners, as this may be useful not only to be “objective when assessing” but also to provide students with “an example of what they will have to face in the final exam of the course and a help to identify their difficulties when learning the [target] language” (Carmen). In relation to this, the interviewed teachers believed in the need to encourage students to identify their own weaknesses and necessities and have “a real picture of their own language level in all the skills and of those things they are good at and not so good at” (Carmen).

The last idea shared by the participants in this regard was related to the students themselves. In this sense, one of the teachers revealed that, in their experience, sometimes learners with SEN are well aware of their own condition as so they tend to share with teachers those aspects they believe need to be considered in order to offer them a quality teaching process.

### **Potential of Technology for Attention to Diversity in CALL Settings**

The last category identified had to do with the potential of technological tools to attend to diversity in EFL lessons when implementing CALL. To this respect, participants agreed on the usefulness of technology and the fact that it could offer opportunities for “independent work” (Sara) and personalization of the learning process, an aspect that “may be enhanced by Artificial Intelligence” (Francisca).

On the same note, participants believed that digital tools could help offer learners adapted material and additional time to learn the target language, as indicated by Sara:

I think it [technology] can help in many ways because, for instance, if students need more time, you can give them extra digital materials and each one can devote the time they need. Also, for example, in the case of EFL, there are many applications that can give you texts adapted to different levels of difficulty, and you can share with students those that suit them best according to their cognitive level. So I think it [technology] can help in many different ways. (Sara)

In connection to the previous idea, participating teachers highlighted to potential of technology to apply UDL to their lessons. As shown by Francisca, “[by following UDL] you can give students different tasks to do but allow them to choose how to do it or present it depending on how they feel more comfortable,” being technology useful to provide them learners with multiples forms of representation, engagement, and actions and expression.

Two specific uses of technology, as indicated by the interviewees, are “zooming texts and materials” and “subtitles” (Carmen), which may be useful for students with visual and hearing impairment respectively. However, David seemed aware of the potential technical problems of technology when implementing CALL and the idea that it can “help a lot but not solve everything, [since] online materials can stop being available any time, apart for the problems related to use of Artificial Intelligence, cheating and writing problems.”

In relation to artificial intelligence, Sara specifically mentions how this technology can help students monitor their own learning:

I see this [artificial intelligence] as positive, but I think it will lead us to replace some correction instruments, to use some artificial intelligence tools to correct the exercises students do in class. I don't think it shouldn't be used, I mean, I think it is positive, but depending on how much we use it, because sometimes it helps them [learners] to learn and sometimes, they [learners] simply copy and paste from it.  
(Sara)

In the same line, participants consider that CALL may help students, whether SEN or nor SEN, to choose their learning path. This is specifically highlighted by Paula, who mentions that “technology is nowadays immensely helpful in the classroom” and can help students be independent, to “master certain language skills very quickly and also a lot of time on their own if given the right guidance and tools.”

It is worth mentioning the claims of David in relation to how technology can help design CALL and non-CALL courses that are completely adapted to the students: “The idea is trying to design our courses in a way that does not make it necessary to adapt anything but make everything ready so that we can reach any student not matter what their needs are” (David).

Finally, the idea behind the potential of technology is, according to Francisca, “to be more available for students and ready to offer them the resources and help they need to be successful in the language learning process.” In the end, as indicated by Paula, it is “all about

creating classroom spaces that allow students to take their time to think and to think about the difficulties they have or what is easy for them, or how they can overcome those difficulties.”

### **Discussion**

As it has already been mentioned, research in the field of CALL has emphasized the potential of this approach to enhance students' language learning process, particularly in EFL environments. However, the role of diversity and individual differences in CALL, such as learning styles and preferences, has been scarcely explored so far (Fernando, 2023; Pawlak, 2022). Therefore, this study has attempted to examine the perceptions and attitudes of a group of language teacher trainers regarding their use of technology to support learner diversity in CALL settings, taking into account the need to consider diverse students' needs and linguistic backgrounds in the design and implementation of CALL (Buendgens-Kosten, 2020). Moreover, this paper has also tried to unveil the practices that language teacher trainers carry out to attend to diversity in their teaching so as to inspire other educators.

From a general perspective, the teacher trainers participating in this study informed that they tended to use technology to improve students' learning but also to address diversity through CALL, especially by promoting independent work and personalizing learning through adapted materials adjusted to cognitive levels and additional time, voicing the claims of other research in the field of CALL (Shapauov et al., 2023; Weng & Chiu, 2023). As for participants' specific practices to identify students' needs, they shared that observation was the best method to understand their preferences, readiness and necessities, followed by direct communication with them, considering the potential of observation to respond to issues that happen in the classroom and enhance learning as discussed by scholars like Benetou (2015).

At this point, it seems necessary to revisit the research questions of the study. Regarding RQ1 (*How do language teacher trainers include technology in their lessons?*), the teacher trainers reported that they used various technological tools when teaching EFL in order to enhance students' autonomy, provide immediate feedback, and create interactive and dynamic lessons, which are certainly benefits of the use of technology as shown by research (Hafour, 2022; Mohammadi-Zenouzagh et al., 2023; Wang, 2024). In this line, participants also mentioned a variety of tools that can be used for game-based learning to review content, as well as other technologies that can help students practice language skills and reinforce areas of difficulty. Of particular interest are the views of respondents in relation to how technology can provide SEN learners with additional support; for instance, they believe technology can offer SEN learners more time for learning as well as other modes of communication, like visual or



auditory, for those students with certain types of impairment or learning difficulties. Furthermore, some of them also referred to COIL, and specifically to eTwinning, as a powerful way to foster language skills, cultural understanding, and the development of digital skills among learners, aspects that have been long proved by previous studies (Huertas-Abril & Palacios-Hidalgo, 2023, 2024; Sánchez-Ruiz & López-Cirugeda, 2024). Teacher trainers also explained that they had student teachers design their own online teaching materials, preparing them for their future teaching praxis and, overall, they considered that integrating technology within language teacher training could help connect prospective teachers' formation with their prospective teaching careers, which goes in line with the findings of previous studies that analyze whether educators consider that integrating of technology in EFL teacher training can have a positive impact on future teachers (Habibi et al., 2019; Tuzahra et al., 2021).

In relation to RQ2 (*How do language teacher trainers attend to diversity in their lessons?*), participants acknowledged that they primarily identified students' needs through observation, which they considered the best way to understand the preferences and readiness as well as special necessities in their lessons. In this sense, it is worth mentioning that observation "is an important tool for teachers and researchers [that can help them] identify and respond to issues in the classroom and enhance learning. However, it is important that observations are made with intent and an effort to avoid bias" (Benetou, 2015, p. 174). Teacher trainers seemed to agree with the potential of observation to respond to issues that happen in the classroom and enhance learning, and also considered that direct communication with students might also help to address their specific situations. Likewise, they considered that technology could offer great opportunities to work with SEN students, such as zooming texts or offering subtitles for those experiencing hardships when learning. Moreover, participants emphasized the importance of emotional connection to create a safe environment for their students to express their needs, and also highlighted the value of offering their learners choices in their learning paths and incorporating cooperative learning techniques to ensure equal opportunities. This idea is in line with previous studies that show the potential of cooperative learning strategies to facilitate inclusive education by encouraging teamwork and mutual support among students (Perlado et al., 2021). In general, teacher trainers shared that their main goal was to create inclusive environments where all students could feel comfortable and valued.

Concerning RQ3 (*What is the potential of technology to attend to diversity in CALL settings according to language teacher trainers?*), this study has highlighted the potential of technological tools in EFL lessons to address student diversity through CALL. In this regard, participants showed agreement on the benefits of technology for promoting autonomous work

and personalized learning, aspects that have been long discussed by previous research (Shapauov et al., 2023; Weng & Chiu, 2023). In addition to this, the teacher trainers who have taken part in the study believed that digital tools may provide adapted resources and additional time for learning, thus supporting varied cognitive levels and responding to learning needs. These findings seem to voice the claims of other studies, such as those developed by Haleem et al. (2022) and Stenman and Pettersson (2020), that show how digital tools can enhance inclusive education by adapting to diverse learning needs, engage students, promote collaboration and accessibility, and foster inclusive learning environments for all students, among other aspects.

It is also worth noting the application of UDL, as indicated by participants, which can enable students to choose how to complete the proposed tasks. In this sense, research has demonstrated how the incorporation of UDL principles into CALL environments can improve accessibility and inclusivity in language learning education, and specifically how the use of different modes of communication (such as visual, auditory, and kinesthetic) can help accommodate diverse learners' demands and enhance learning outcomes (Kasch, 2021a, 2021b). In line with this, teacher trainers agreed that specific tools like zooming texts and subtitles can aid students with, for instance, visual and hearing impairments. Moreover, despite potential technical issues, participants claimed that their primary aim was to create inclusive courses that accommodate the needs of all students, making sure that resources could be easily accessible to enhance success in CALL and non-CALL settings.

### **Conclusion**

The findings of this study highlight the growing importance of integrating technology thoughtfully and inclusively to meet the varying needs of diverse learners in CALL settings. By showcasing the strategies and insights of experienced language teacher trainers, this paper provides valuable guidance for educators seeking to better address learner diversity. Ultimately, it reinforces the necessity of continuous professional development and innovation in teaching practices to ensure that all students, regardless of their linguistic or cultural backgrounds, are supported in achieving success in language learning.

Considering the findings of this study, certain implications and recommendations should be taken into account. Firstly, HEIs should prioritize incorporating comprehensive modules on diversity and inclusion in CALL into teacher training curricula, as this would ensure that teacher trainers are well-prepared to use technology to meet the diverse needs of learners. Secondly, professional development opportunities focused on inclusive CALL

strategies should be made available to both current and future language teachers, with the aim to provide them with the tools and knowledge needed to effectively integrate CALL to support diversity and, specifically, SEN students. Thirdly, HEIs should emphasize the potential of CALL to offer flexible and personalized learning experiences for SEN students, and, to do so, they could adopt technologies that promote UDL (i.e., that offer multiple modes of engagement, representation, and expression). Fourthly, HEIs should provide stronger support for the integration of inclusive CALL practices by fostering a culture of inclusion and diversity, developing specific guidelines and resources to encourage teacher trainers to adopt more inclusive approaches in their use of technology. Finally, HEIs should invest in improving access to digital resources and infrastructure, which includes making necessary technologies and software available to both teacher trainers and student teachers, particularly those with SEN.

Notwithstanding the interest of these results, some limitations should be considered. First, the study has been exploratory in nature, focusing solely on the perspective of five teacher trainers from a very specific context. Therefore, the findings may not be applicable to other settings, which in turn highlights the need for future studies to collect data from a more extensive sample. Secondly, the analysis has been exclusively qualitative, lacking quantitative insights that could offer a more comprehensive perspective and expand on the results. Thirdly, the results rely exclusively on self-reported data, which may introduce bias due to participants' subjective viewpoints and beliefs. In this sense, prospective research should incorporate diverse data sources to enrich and deepen understanding of how to address diversity in CALL settings.

All in all, this study has shown that teacher trainers believe that CALL can effectively address learner diversity by providing personalized learning experiences tailored to individual needs, preferences, and learning paces. CALL certainly offers a variety of interactive and adaptive tools, such as language learning apps, online exercises, and multimedia resources, which can cater to different learning styles and proficiency levels, allowing educators to create inclusive lesson plans that accommodate the unique backgrounds and abilities of each student, and, ultimately, fostering a more equitable learning environment.

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