

Analysis of the Integration of Intercultural Competence through CALL in Primary Pre-service Teaching Syllabi

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Abstract

This study analyses the integration of intercultural competence through technology in the teaching syllabi related to foreign language (FL) in the pre-service primary teacher training degrees (Degree in Primary Education) of Spanish universities. The research aims to understand how these elements, which enhance computer-assisted language learning (CALL), are incorporated into the teaching syllabi and their impact on teacher training. Using a qualitative documentary analysis, the study reviewed 496 course guides from foreign language teaching (FLT) programmes. The analysis focused on competencies, learning outcomes, and content, with a particular emphasis on the use of digital technologies and their relation to the soft skills developed in intercultural education. The findings indicate that while intercultural components and digital technologies are included, they are often addressed separately. Most programmes prioritize linguistic proficiency and soft skills, such as empathy and adaptability, yet do not fully integrate these aspects with technology to foster comprehensive intercultural

competence. Digital tools are primarily employed to enhance practical language skills but have limited application in promoting critical thinking or cultural understanding. The study concludes that there is a need for a more cohesive integration of technology and intercultural elements within FLT programmes to better prepare future educators. It recommends enhancing teacher training curriculums to incorporate emerging technologies and intercultural frameworks comprehensively, ultimately promoting a more inclusive and effective educational environment.

Keywords: Computer-assisted language learning (CALL), Intercultural competence (IC), Foreign language teaching (FLT), Soft skills, Teaching syllabi

Introduction

The integration of culture in foreign language teaching (FLT) is essential, as it not only facilitates the understanding of linguistic nuances but also prepares students for meaningful intercultural interactions. Culture is widely recognised as integral to FLT, as language serves as a primary vehicle for conveying cultural practices and beliefs (Kramsch, 2011). Consequently, learning a foreign language inherently involves understanding the cultural practices of its speakers, making FLT crucial for preparing students to engage with diverse cultures (Byram & Golubeva, 2020). In this regard, intercultural communicative competence (ICC) emerges as a vital content within FLT syllabi that should be considered in FLT. Drawing on Byram (1997), ICC integrates communicative competence (CC) with intercultural competence (IC) understanding. IC encompasses knowledge of others and oneself, skills to interpret and relate, the ability to discover and interact, as well as valuing and relativising diverse beliefs and behaviours. ICC is central to this framework, which aims to equip learners with the tools for effective cross-cultural communication and interaction. This framework is particularly relevant in the Spanish educational system, where developing intercultural competence (IC) is essential to ensure equity and inclusion in schools.

Considering the cultural diversity in the Spanish educational system, developing IC is essential in the Spanish context of primary education to ensure equity and inclusion in schools. For instance, Serra and Carbonell (2024) examined how pedagogical renewal schools address interculturality, noting that intercultural education is deemed essential; it often becomes a mere compliance activity in regions with fewer immigrant students. They advocate for a more integrated approach to effectively reflect the growing diversity in schools. However, there is a

recognised lack of attention to preparing future teachers to foster interculturality in their classrooms (Gómez-Sánchez & Bobadilla-Pérez, 2024; Marcos & Sanahuja, 2021). The creation of an inclusive school environment is promoted by implementing a culturally conscious curriculum and tackling discriminatory attitudes from an early age.

To develop inclusive schools, it is important to consider the gap in initial training that could affect equal access to digital educational resources. The OECD (2022) has identified teacher training as one of the important factors in promoting digital learning. In the case of Spain, according to the report, there is a negative difference of approximately -5% between schools with a high concentration of students from disadvantaged backgrounds and those with a low concentration in terms of the initial training received in the use of information and communication technologies (ICTs) for teaching. Therefore, as a conclusion of the report (OECD, 2022), this means that at schools with a high concentration of students from disadvantaged backgrounds, fewer teachers have received initial training in the use of ICT compared to schools with a low concentration of disadvantaged students. This disparity underscores the importance of equipping teachers with the skills needed to integrate digital tools effectively into their teaching practices, especially in diverse and resource-constrained settings.

Spanish legislation emphasises equity in education by addressing diverse student needs and ensuring necessary resources for all learners. State legislation recognises this diversity and devotes a specific section to equity, stating that some students may have specific educational needs that arise from special educational needs, learning difficulties, high intellectual ability, late entry to the system, personal circumstances or school history, delayed maturation, language and communication development disorders, attention disorders, socioeducational vulnerability or severe lack of knowledge of the language of learning. The Organic Law 3/2020 of December 29, which amends the Organic Law 2/2006 on Education (LOMLOE), explicitly addresses these issues by mandating that educational administrations provide the necessary resources to ensure that all students, regardless of their circumstances, can achieve their full potential. This includes addressing needs related to language acquisition, communication disorders, or other barriers to learning, thereby reinforcing the importance of equity and inclusion in the educational system. Therefore, primary teachers' training programmes should adequately equip future teachers to cater to these realities, where flexibility and different resources are of utmost importance to provide good quality education. In light of these legislative mandates, it is also crucial to explore innovative approaches like inclusive computer-assisted language learning (CALL) to meet the diverse needs of students.

As society becomes more diverse, addressing the evolving needs of students from various backgrounds is essential. Integrating cultural elements in language education promotes intercultural understanding and inclusivity. Technology enhances this process by enabling cross-cultural engagement and creating dynamic learning environments. However, challenges like access inequality and digital literacy must be fully addressed to leverage its potential (Tafazoli, 2024). Inclusive CALL aims to create a technology-driven environment that embraces diversity, where teachers play a key role in promoting inclusion inside and outside the classroom. According to Beatty (2013), CALL encompasses a broad spectrum and may deal with several issues, such as material design, technologies, pedagogical theories, and modes of instruction. In the current study, CALL tools, encompassing a wide range of digital activities, applications, and programmes, are understood to develop both communicative and intercultural competencies among young learners effectively.

In order to develop IC through CALL, three key factors need to be considered and introduced in pre-service training programmes, the provision of diverse, authentic cultural resources, the creation of interactive experiences, and the integration of learners' online activities and identities with formal language learning environments Guth and Helm (2012). Anas et al. (2022) stress the transformative role of effective teaching in transmitting knowledge to students, which bridges pedagogical knowledge with or without digital technologies. Their research advocates for incorporating digital motivation and awareness into teacher education, ongoing professional development, and the promotion of critical pedagogy within digital literacy training. This aligns with Reddy et al. (2020), who define digital literacy as the ability to locate, evaluate, and use information effectively, create new content, and share it using appropriate technologies. Together, these findings emphasise the need for comprehensive teacher training to address digital literacy demands in the modern educational landscape. Recognising the need for comprehensive teacher training, recent scholarly work underscores the dual importance of IC and digital literacy in fostering inclusivity and diversity in education

Recent scholarly work emphasises the importance of IC and digital literacy in education, particularly as avenues for promoting inclusivity and diversity. These priorities align with European frameworks that emphasise the democratic dimension of education (Council of Europe, 2018), digital competence (European Commission, 2020a, 2020b), and plurilingual and intercultural competence (Council of Europe, 2020). These guidelines highlight why FLT is an appropriate environment for developing these skills and emphasise the need for future educators to acquire these competencies during their initial training. Notably, while three-quarters of European education systems recognise digital competence as essential, only half

include it in initial teacher training recommendations (European Commission, 2020b). Researchers such as Byram (2021) and Barrett and Golubeva (2022) have highlighted these critical aspects. This study builds on this scholarship by examining how pre-service teacher trainers incorporate intercultural perspectives through technology in FLT contexts. Additionally, it evaluates the impact of this integration on learners' soft skills, such as empathy, social skills, and emotional resilience, considering that soft skills are "personality traits, goals, motivations, and preferences that are valued in the labour market, in school, and in many other domains" (Heckman & Kautz, 2012, p. 451), and bearing in mind the importance the OECD and European Union have given to these in national training policies (da Silva Fernandes et al., 2021).

To further explore these critical aspects, our study investigates the intersection of CALL and intercultural education in pre-service teacher training programmes. Building on the work of Shadiev and Yu (2024), our research examines how these programmes integrate technology and intercultural perspectives. By analysing 496-course guides from FLT programmes in 39 public universities across Spain, the research aims to assess how these programmes incorporate intercultural and inclusive practices through technology and soft skills development (Council of Europe, 2018) within Byram's ICC framework (2021). This research addresses a critical gap in understanding the integration of intercultural perspectives and technology in language teacher training, specifically through developing soft skills, which will be discussed in later sections. The study ultimately seeks to enhance educators' preparedness for navigating diversity and interculturality in the language classroom, promoting inclusive learning environments, and advancing students' IC.

Pre-service teacher trainers (in this case, university professors who impart these courses) play a key role in this process, as they must ensure that these perspectives are effectively incorporated into FLT while also fostering the development of students' empathy, social skills, and emotional resilience. The teacher's attitude is of fundamental importance for working with diversity in the classroom (OECD, 2018). In doing so, they establish a connection between intercultural competence and developing fundamental soft skills. This study analyses the integration of intercultural competence through technology in the teaching syllabiⁱ related to FLT in the pre-service Primary teacher training degrees (Degree in Primary Education) of Spanish universities. In particular, it seeks to address the following research questions:

RQ1: How do pre-service teacher trainers incorporate intercultural perspectives through CALL in their teaching syllabi?

RQ2: How do pre-service teacher trainers foster the development of students' empathy, social skills, and emotional resilience, exploring the relationship between intercultural competence and soft skills acquisition?

Literature Review

Intercultural Education, Soft Skills, and Inclusion

Michael Byram's (2021) conceptualisation of ICC has exerted a prominent influence on the convergence between language and culture, particularly in European settings, due to its contribution to the formulation of the *Common European Framework of Reference for Languages* (CEFR) (Council of Europe, 2001, 2020) and the *Framework of Competences for Democratic Culture* (FCDC) (Council of Europe, 2018), and thus, on the current curriculum of Foreign Languages in Spain. Byram's ICC model has evolved to adapt to the demands of our constantly changing society, as highlighted by García (2016), who emphasises the modifications introduced in the 2001 edition of the CEFR regarding IC. However, Herzog-Punzenberger et al. (2023) argue that there is a lack of studies focusing on the integration of IC. They identify multiple gaps that affect teachers' capacity to address interculturality effectively, from initial training to continuing professional development and policy implementation. These deficiencies illustrate the necessity for comprehensive reform to address disparities in training and support, as well as a transformation in pedagogical perception and practice with regard to cultural and linguistic diversity. Furthermore, research on the development of intercultural learning has increased due to the importance granted by UNESCO (2013) and the OECD (2018) to enhance the intercultural skills and attitudes of 21st-century students.

The Council of Europe defines soft skills in education as a set of key personal attributes and interpersonal abilities, such as communication, critical thinking, collaboration, adaptability, and emotional intelligence, crucial for effective and inclusive learning environments (Council of Europe, 2018). These competencies enable students to work harmoniously with others, solve problems, and adapt to various situations, promoting inclusive education by valuing diverse perspectives and fostering mutual respect. Byram (2021) connects these soft skills to the concept of intercultural competence, which includes openness, curiosity, respect for other cultures, knowledge about cultural differences, and skills in interpreting and relating to them. Byram (2021) emphasises that these soft skills are fundamental in developing intercultural competence, as they empower individuals to engage inclusively and effectively in

diverse cultural contexts. Therefore, nurturing soft skills is essential for personal and academic success and promoting inclusion and intercultural understanding in education.

Intercultural education and inclusion are closely related and should influence our educational practice. Several studies have explored interculturality to address inclusion and discrimination in the school environment (Arroyo González, 2013; Patiño-Alvarado, 2016). Among the pursued objectives are fostering attitudes of respect towards different cultures, improving students' self-concept, promoting coexistence and culturally diverse cooperation, and promoting equality of academic opportunities. González-Pérez (2014) examines Intercultural Education as a means of inclusion, noting that it is not a school approach but a guiding principle for educating all students. Additionally, it distinguishes between intercultural and inclusive education, considering the latter broader, as intercultural education contributes to the path towards inclusion by ensuring that all children enjoy the educational experience and learn from respect for their own differences and those of others.

Our study underscores the need for such an integrated approach. The effective integration of Intercultural Education, Soft Skills, and Inclusion is essential for creating a holistic and effective educational framework. Intercultural Education fosters an appreciation for cultural diversity, crucial for developing inclusive attitudes and practices. Soft skills like communication, critical thinking, and emotional intelligence enable students to engage effectively and respectfully in diverse cultural contexts. Inclusion ensures that all students, regardless of their background, have equal opportunities to succeed and feel valued in the educational environment. By intertwining these concepts, educators can cultivate a learning atmosphere that respects and celebrates diversity and equips students with the necessary skills to thrive in a multicultural world. This comprehensive approach addresses the complexities of modern education, promoting social justice and preparing students to be active, empathetic, and competent global citizens.

Educational Technologies and Inclusion

According to the *Digital Education Action Plan 2021-2027* (European Commission, 2020a), the skilful employment of digital technology by educators can provide opportunities for high-quality and inclusive education for all learners as it seeks to create “more personalised, flexible and student-centred learning” (p. 1). In this line, one of the main principles of this plan is highlighted under the premise that “Digital education should play a pivotal role in increasing equality and inclusiveness” (p. 8). Therefore, the plan seeks to enhance digital skills and competencies for the digital transformation to foster digital citizenship and inclusion (European

Commission, 2020b, p. 24). However, it also reports concerns by different stakeholders, such as a potential digital divide and how to guarantee inclusion in access (2020a, 2020b). Furthermore, it underlines the fact that “the type and design of technological tools and platforms, as well as the digital pedagogy used, impact directly on whether individuals are included or excluded from learning” (2020a, p. 1). Regarding school access and participation policies, the European Commission (2023) reports the use of blended learning with the help of digital tools and electronic educational resources in some European educational systems (p. 48). This resonates with Pipitone and Fulantelli’s (2020) paper as “the use of digital technology in distance learning offers a way for transmitting knowledge and skills, but also a means for building a new, more equitable and more cohesive society” (p. 188).

Additionally, research on Special Educational Needs (SEN) and technology has been carried out in recent years (Borges et al., 2016; Garg & Sharma, 2020; Ok & Rao, 2019) to account for its use in inclusive education, understanding this as “the design of school, classrooms, teaching aids, teaching style and activities to accommodate all students so that all can learn and participate equitably” (Garg & Sharma, 2020, p. 525). To do so, digital tools such as Google Chrome apps (Ok & Rao, 2019), the use of AI Technologies and Augmented Reality (Garg & Sharma, 2020), as well as participatory design practices based on technology (Borges et al., 2016) have emerged as possible aids for an inclusive pedagogy.

Concerning inclusive practices with educational technology support, González-Pérez (2014) establishes two main characteristics: (1) performance teaching and learning process and (2) management resources: human, material, and training. Among these traits, some of the measures highlighted are the need for more teacher autonomy to plan and develop inclusive activities, offering activities through other platforms to reinforce the knowledge acquired in school, and adapting educational technology to SEN students. Therefore:

Teachers are the key to reinforcing the inclusiveness and the use of educational technology because, in the end, they have the responsibility to design and promote changes in their classes. However, the use of educational technology by itself may not necessarily promote equal inclusiveness for all students (González-Pérez, 2014, pp. 361-362).

Hence, technology does not promote inclusive education and “may not necessarily be the panacea to effective digital education” (Kearney et al., 2022, p. 131). Furthermore, several factors, such as students’ digital well-being (Panesi et al., 2020) and students’ previous

experiences with ICT (González-Pérez, 2014), should be accounted for to introduce educational technologies from an inclusive viewpoint. However, the use of digital technology brings many benefits as students are provided with different ways of accessing information, managing their own learning process, and engaging through different means.

Language Learning, CALL, and Inclusion

Several recent studies have examined the intersection of CALL, inclusion, and teacher training in language education. Bilki et al. (2023) explored how critical digital literacy and virtual exchange within CALL, from the perspective of FLT instructors, enhance inclusiveness for all community members. Similarly, Engen (2019) identified a close relationship between teachers' digital competence and the socio-cultural conditions that must be considered when implementing ICT in schools. This relationship, grounded in a constructivist understanding of technology, emphasises the importance of its domestication for more inclusive practices. In addition, Bisol et al. (2015) analysed the use of "Incluir," a digital resource aimed at fostering reflection on inclusion in teaching practice, while Llorente-Cejudo et al. (2023) validated the "DigCompEdu Check-In" questionnaire, designed to assess educators' digital competence from an inclusion standpoint.

Recent studies show that certain components of CALL, such as telecollaboration and Virtual exchanges, effectively enhance intercultural competence among pre-service teachers. For instance, Eren's (2023) study demonstrated that telecollaboration could enhance pre-service teachers' intercultural competence and shift their cultural assumptions. Sardegna and Dugartsyrenova (2021) also used telecollaboration to foster intercultural learning, providing guidelines for designing discussion questions that promote such learning. Rets et al. (2023) further explored the use of VE to promote intercultural effectiveness in pre-service teacher training, offering recommendations for designing online collaborative learning programmes.

From an anti-discriminatory perspective, Brown (2009) argues that FL teacher training should ensure equity and inclusion, fostering a respectful and cooperative learning environment. This approach supports the development of equality standards by incorporating diverse cultural content and countering discriminatory attitudes, promoting a more inclusive educational space. Recognising cultural diversity early on is critical for ensuring equal access to education, empowering students to challenge inequality, and advocating for social justice. CALL supports this anti-discriminatory perspective by providing tools and resources that facilitate equitable access to language education. CALL can incorporate diverse cultural

content and adaptive learning technologies, helping to create inclusive and respectful learning environments that counter discriminatory attitudes and promote social justice.

Technology further amplifies these efforts by enhancing pedagogical practices and enriching intercultural learning experiences. For example, Tafazoli (2024) stresses that understanding culture is essential for effective language learning, as integrating cultural elements fosters intercultural awareness, empathy, and inclusivity. Anas et al. (2022) and Gómez-Sánchez et al. (2024) argue that successful digital language teaching requires solid pedagogical and technological knowledge integration, emphasising long-term professional development and institutional support to enhance teachers' digital literacy and motivation. These aspects are vital for leveraging ICT to foster inclusive and intercultural learning.

However, like all forms of literacy, digital literacies are political, as Chun et al. (2016) point out. They note that new communication technologies can shape social dynamics and influence authority and credibility. While digital platforms offer opportunities for education and inclusion, they also risk reinforcing cultural imperialism if not critically engaged with them. This critical digital literacy aspect is crucial for learners to navigate the biases and interests embedded in online content while understanding the cultural differences in technology use.

Shadiev and Yu's (2024) review of recent CALL studies on intercultural education underscores the importance of sociocultural frameworks like Byram's (1997) model of cross-cultural communicative competence and social constructivism. These frameworks emphasise the role of social interaction in learning across cultural contexts, with technologies like discussion forums and telecollaboration tools facilitating language output and cultural exchange. While CALL has enhanced language and intercultural skills, challenges such as high costs and technical issues remain, requiring careful consideration in future research and educational projects.

This literature review critically synthesises the intersections of intercultural education, soft skills, inclusion, and the use of technology in language education through CALL, highlighting their collective significance in contemporary pedagogical practices. By integrating insights from diverse theoretical and practical perspectives, the review offers a comprehensive framework for understanding the role of these elements in shaping inclusive and culturally responsive language education.

The review identifies several critical gaps within the existing literature, including the insufficient integration of intercultural competence within teacher training programmes, the lack of scalable and context-sensitive frameworks for using digital technologies to promote

equity, and the limited exploration of the socio-political dimensions of digital literacy in educational settings (Gómez-Sánchez & Bobadilla-Pérez, 2024; OECD, 2018, 2022).

Addressing these gaps, the literature review underscores the necessity for further empirical research and practical innovation to bridge the divide between theory and application. This synthesis provides valuable insights for researchers, policymakers, and educators, forming a foundation for designing and implementing strategies that effectively respond to the complexities of fostering inclusion, embracing cultural diversity, and navigating digital transformation in education.

Methods

Research Design

The documentary analysis consists, according to Hernández-Ayala and Tobón-Tobón (2016), of “searching, selecting, organizing and analyzing a set of written materials to answer one or more questions about a topic” (p. 401). This study presents an analysis of the documents related to the presence of IC in the initial training of foreign language teachers. A qualitative analysis was conducted to accomplish the stated aims, characterised by its documentary and analytical nature. The treatment of cultural diversity in educational guides and its interpretation within FLT courses was investigated through a qualitative analysis of their presence and coverage. This approach facilitated an understanding of how the study’s issues manifest in the initial training of prospective educators and allowed for observation of other components related to diversity from an intersectional viewpoint.

Source Documents

Data were sourced from initial teacher training programmes for FLs in Primary Education (ISCED 1) (UNESCO, 2013) across all public universities in Spain. The document sample comprised FL teaching syllabi oriented towards Primary Education degrees during the 2021-22 academic year. Initially, 496 FL syllabi were selected for subsequent analysis, focusing on primary curriculum elements such as competencies, learning outcomes, and content (Cáceres, 2003; Flores-Kanter & Medrano, 2019; Martínez, 2006). The sample documents comprised 17% of mandatory subjects, with the majority being optional (82%). English was the most prevalent FL in 89% of the analyzed documents, followed by French in 8% of the guides. These courses were primarily delivered in the final two years of undergraduate study, during the 3rd (28%) and fourth (58%) years, potentially linked to their optional nature. The disciplinary

alignment of these courses was predominantly within the Humanities (41%), followed by Education or Social Sciences (31%).

Instruments

The instrument for collecting information was subjected to a double deductive-inductive process (Neubauer, 2022; Neubauer, 2023). The dimensions of the deductive process were defined based on the theoretical references gathered in the conceptual framework. Thus, a book of families and codes was elaborated by Barret and Golubeva (2022) and Herzog-Punzenberger et al. (2023) (Table 1).

Table 1

Codebook of Families, Categories, and Codes (Adapted from Barret & Golubeva, 2022; Herzog-Punzenberger et al., 2023)

Family	Categories	Codes
Characterisation of the set of analysed subjects	The geographical delimitation is where the centres offering the subjects are located, including both the autonomous community and the university institution to which they belong.	Educational Administration University
	Characterisation of the subject	CFER level (A1, A2, B1, B2, C1, C2) Faculty members affiliated knowledge area (Social Science, Education, Humanities, Other) Foreign language (English, French, German, Portuguese, Other) Number of credits for the subject (4, 5, 6, other) Title (Subject name) Typology of subject (Basic, compulsory, optional, specialization) Year (1, 2, 3, 4)
The intercultural competence in the programme	Modules that have ICC used in the title along with the weightage in the overall programme Skills related to intercultural	Keywords about intercultural competence in the title of the programme ICC is used explicitly in the title of the module
		Multiperspectivity

competence (DICE report)	Skills in discovering information about other cultural affiliations and perspectives (discovering information)
	Skills in interpreting other cultural practices, beliefs, and values and relating them to one's own (Interpreting other cultural practices)
	Empathy: the ability to understand and respond to other people's thoughts, beliefs, values and feelings
	Cognitive flexibility: the ability to change and adapt one's way of thinking according to the situation or context
	Skills in critically evaluating and making judgments about cultural beliefs, values and practices, discourses, and products, including those associated with one's own cultural affiliations, and being able to explain one's views (critically evaluating and making judgments)
	Skills of adapting one's behaviour to new cultural environments
	Linguistic, sociolinguistic, and discourse skills, including skills in managing breakdowns in communication
	Plurilingual skills to meet the communicative demands of an intercultural encounter, such as the use of more than one language or language variety or drawing on a known language to understand another ('intercomprehension')
	The ability to act as a 'mediator' in intercultural exchanges, including skills in translating, interpreting, and explaining

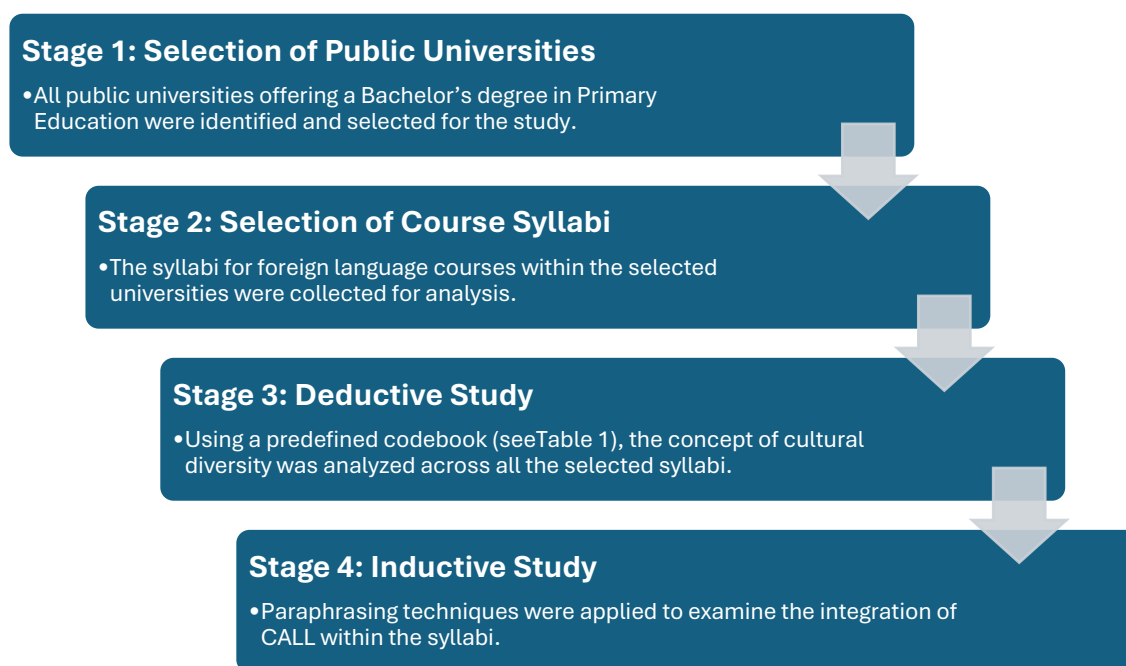
Procedures

The methodology focuses on the analysis of syllabi by the teachers responsible for the FLT courses since the codebook of families, categories, and codes is listed in Table 1. The methodological approach aimed to identify theoretically relevant material to elucidate how qualitative data, particularly FL curricular planning, integrate the study's concepts into competencies, content, and learning outcomes (Cáceres, 2003). Then, an inductive analysis was carried out to explore the presence of technology as a didactic tool and its role in initial training. A deductive technique was used (Flores-Kanter & Medrano, 2019), extracting the categories from table 1. Subsequently, inductive analysis was applied based on paraphrasing to find out and go deeper into the meaning of interculturality and its relationship with CALL and to find out what the place attributed to technological resources was.

The study followed a multi-phase methodology designed to systematically analyse the integration of cultural diversity and CALL in the syllabi of foreign language courses within public universities offering Primary Education degrees (see Figure 1).

Figure 1

Research Stages



Data Analysis

A deductive technique (Flores-Kanter & Medrano, 2019) was applied, extracting categories or semantic fields applicable to the specific context under examination of intercultural competence in syllabi. MAXQDA Pro22 software facilitated the analysis of all data and the development of categorisation.

After problem definition and data collection, screening was carried out to identify syllabi that address competencies/learning outcomes or content related to interculturality. Subsequently, a qualitative paraphrase analysis was developed, which is detailed below.

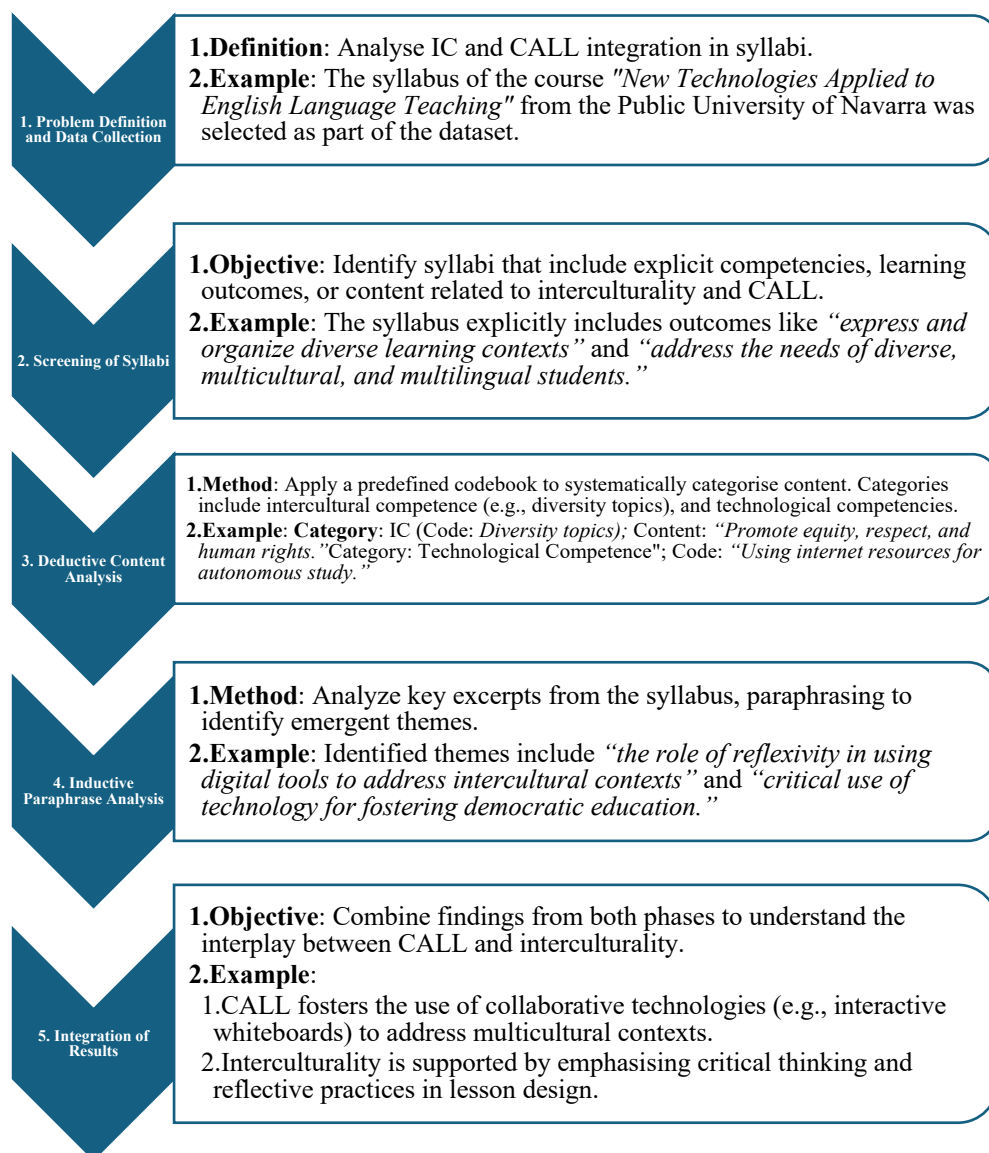
The data analysis followed a two-phase approach combining deductive and inductive methodologies. A deductive content analysis was initially conducted using a predefined codebook (see Table 1). Each syllabus was systematically coded to identify how intercultural elements were integrated into the curriculum. Subsequently, an inductive analysis was employed to deepen the understanding of intercultural and CALL. Key excerpts from the syllabi were paraphrased to allow the emergence of new themes and sub-themes. This

combination of approaches allowed for a comprehensive exploration of the role of CALL and interculturality in language education syllabi.

As an example, the step-by-step stages of the data analysis are explained using the course ‘New Technologies Applied to English Language Teaching’ as the subject of analysis. The process began with problem definition and data collection, where the syllabus of this course, offered by the Public University of Navarra, was selected (see Figure 2).

Figure 2

Data Analysis Stages

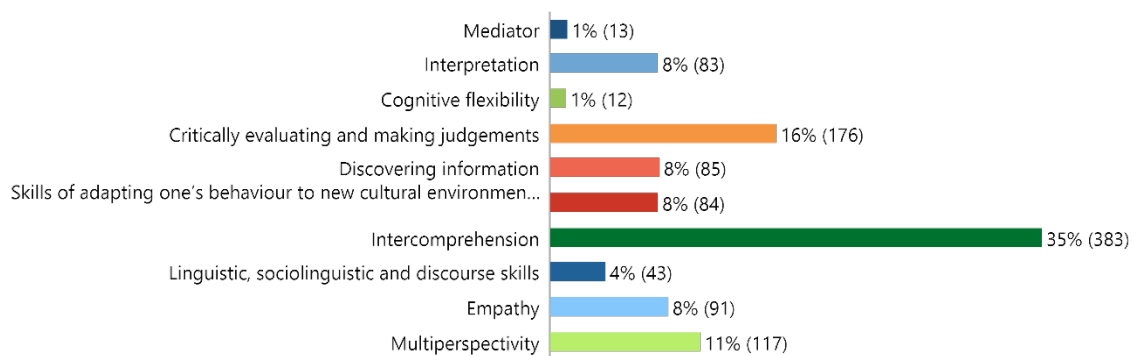


Results

The first result is to note the term interculturality in 300 programmes, representing 60% of the documents analyzed. The term interculturality will be examined in the subjects analyzed in the following section. To do so, we start from the components of interculturality in the Diagnostic Inventories for Cognition in Education (DICE) report, specifically from the section on ‘skills’ (Barret & Golubeva, 2022). The interculturality component, which is addressed to a greater extent, is intercomprehension in 35% of the segments analyzed and, to a lesser extent, critically evaluating and making judgments, multiperspectivity, empathy, and interpretation. It is worth noting the low frequency of components such as mediation or cognitive flexibility presented in Figure 3.

Figure 3

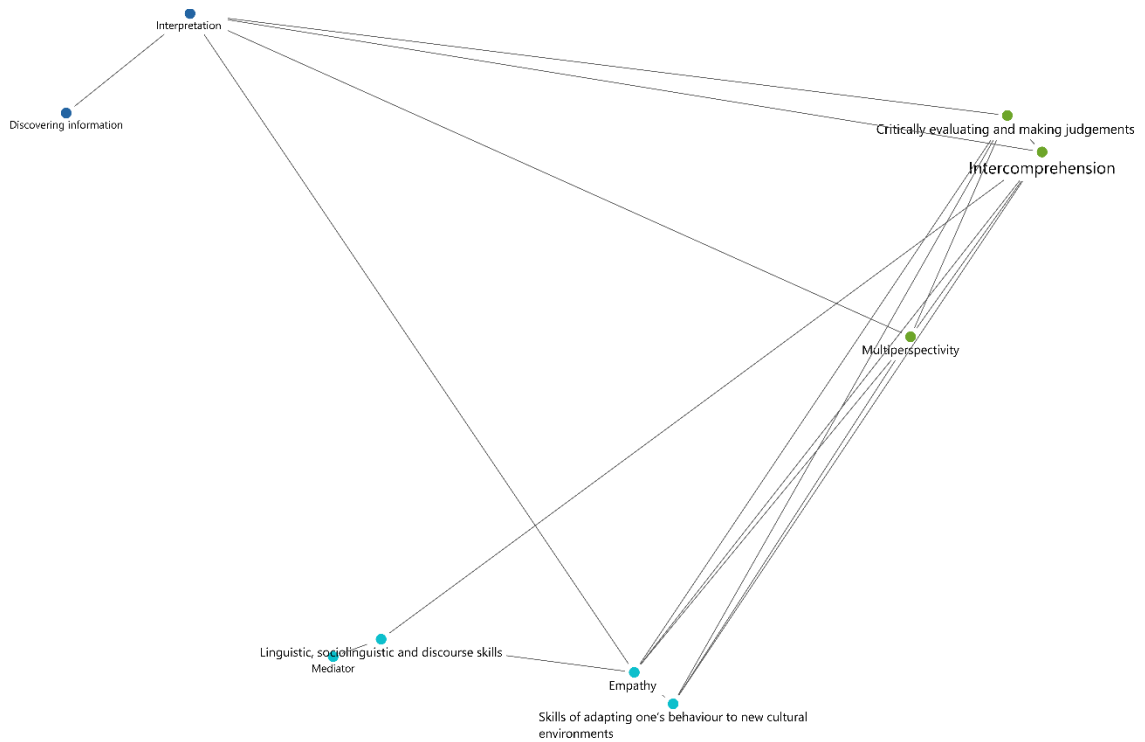
Skills Related to Intercultural Competence



The skills that make up intercultural competence include ‘multilingual skills for meeting the communicative demands of intercultural encounters,’ such as using several languages or one language to understand another (‘intercomprehension’). These skills are reflected in competencies such as dealing effectively with language learning in multicultural contexts (28% of subjects) and communicating to teach in different languages. The second most integrated skill is the ability to evaluate cultural beliefs, values, and practices critically, exemplified by the promotion of critical reading of texts in all scientific and cultural fields. The third most integrated skill is multiperspective, which involves designing learning environments considering diversity, gender equality, equity, and respect for human rights. Figure 4 shows the connections between different codes. There is a strong link between ‘Empathy’ and ‘Multiperspectivity’ and ‘Intercomprehension’ and ‘Critically evaluating and making judgments’. It can also be seen how ‘Intercomprehension’ has several connections with other codes.

Figure 4

Co-occurrence of Codes by Segment



Next, the frequency of words associated with the competences with the highest levels of mastery in the DICE report (Barret & Golubeva, 2022) will be analysed, including technology in the teaching programme. As shown in Table 2 dealing with intercomprehension, multiculturalism and diversity are predominant concepts contemplated within the competencies or contents related to this code and undoubtedly favour inclusion.

Table 2

Frequency of Terms Most Present in Intercomprehension Competence Related to Interculturality

Word	Frequency	%
contexts	249	3.45
learning	216	2.99
languages	145	2.01
situations	137	1.90
language	110	1.52
multicultural	92	1.27
multilingual	76	1.05
diversity	75	1.04
address	74	1.02
know	73	1.01
efficiency	73	1.01

When dealing with the aforementioned code we can see terms related to curriculum and school organisation, but also to didactic resources. It is more specific than the previous code, with words such as ‘audiovisual,’ ‘commentary,’ ‘texts,’ ‘curriculum’, or ‘reading’ (See Table 3).

Table 3

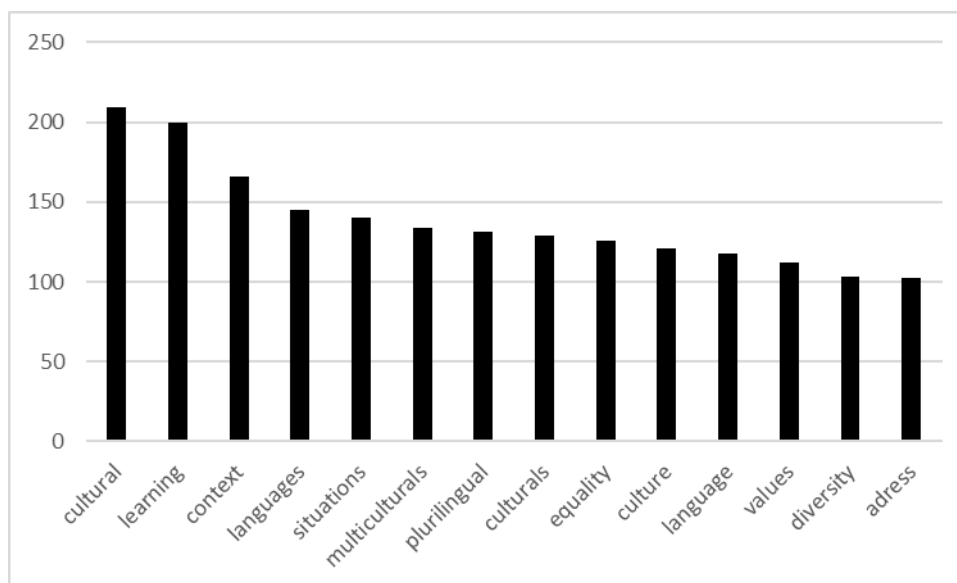
Frequency of Terms Most Present in Critically Evaluate Cultural Beliefs, Values, and Practices Competencies Related to Interculturality

Word	%
information	5.33
apprenticeships	5.25
audiovisual	5.25
civic	5.25
cultural	5.25
discern	5.25
training	5.25
contribute	5.17
wealth	5.17
selectively	5.09
cultural	3.68
scientific	3.53
commentary	3.53
critical	3.53
various	3.53
domains	3.53
texts	3.53
encourage	3.45
reading	3.45
contents	2.90
school	2.90
curriculum	2.59

The most significant presence of the intercultural component is found in subjects that explicitly integrate culture as part of foreign language learning: Francophone Culture and its Didactics, Culture in Foreign Language Teaching: English, or Didactics of Culture. The frequency of terms with higher presence, as shown in Figure 5, in addition to those etymologically related to culture, such as ‘multicultural’ or ‘cultural,’ evidences the presence of the didactic component, with the word ‘learning’ appearing in 200 segments. Additionally, it is worth noting terms such as ‘contexts’ or ‘situations,’ which appear in over 140 segments, and, to a lesser extent, ‘values,’ ‘diversity,’ and ‘equality.’

Figure 5

Terms Related to the Intercultural Component



After this characterisation of the FLT subjects and the interculturality construct present in them, the presence of technology as a didactic tool and the role it plays in initial training was carried out through an inductive analysis. To this end, the first thing to note is that ICTs are present in 63% of subjects, including the intercultural component.

As a first result, it is possible to distinguish subjects that include interculturality as part of their competencies. Two specific competencies predominate, the one which relates interculturality from the point of view of intercomprehension: ‘Knowing the educational implications of information and communication technologies in foreign language teaching-learning contexts,’ and the one which is oriented as a didactic resource to favour learning-based on understanding and critical capacity, which is related to constructs such as empathy or critical evaluation: ‘Knowing and applying information and communication technologies in classroom activities to promote comprehension and critical learning’ or ‘Critical use of digital technologies in English-L2.’

With a more moderate presence, the following competencies appear in some subjects: “Information technologies are introduced, but also the capacity for discernment to contribute to learning and citizenship training and to promote cultural richness” or “Competencies related to interculturality are very present and to develop them we work with contents such as online resources, content creation and evaluation tools, interactive whiteboards, collaborative ICTs, and web pages,” as can be seen in Table 4.

Table 4

Subject in which Interculturality, Technology, and CALL are Related with the Corresponding Paraphrase

Paraphrase	Subject name	
Specific competence that relates interculturality from the point of view of intercomprehension.	Lengua extranjera iii: destrezas de comprensión oral y escrita/ Foreign Language III: Oral and Written Comprehension Skills., Pos. 12	
	Lengua extranjera iii: destrezas de comprensión oral y escrita/ Foreign Language III: Oral and Written Comprehension Skills., Pos. 12	
	Lengua extranjera iii: destrezas de comprensión oral y escrita/ Foreign Language III: Oral and Written Comprehension Skills., Pos. 12	
	Lengua extranjera III: Destrezas de Comprensión Oral y Escrita/. Foreign Language III: Oral and Written Comprehension Skills, Pos. 13	
	Lengua extranjera iii: destrezas de comprensión oral y escrita./ Foreign Language III: Oral and Written Comprehension Skills. Pos. 12	
	Specific competence that relates reflexivity to the educational implications that the use of ICT may entail.	Aprentatge integrat de llengües i continguts/ Integrated Language and Content Learning, Pos. 18
		Aprentatge integrat de llengües i continguts/ Integrated Language and Content Learning, Pos. 15
		Aprendizaje Integrado de Contenidos y Lengua Extranjera (Inglés)/ Integrated Language and Content Learning (English), Pos. 22
		Idioma extranjero 3: francés/ Foreign Language 3: French, Pos. 16
	Generic competence related to interculturality from the critical evaluation and issuing of judgments concerning knowledge, values, and practices, with an emphasis on the role of technology in society, science, and humanism.	Idioma Extranjero III/: Inglés/ Foreign Language 3: English, Pos. 15
Nuevas tecnologías aplicadas a la enseñanza del inglés/ New Technologies Applied to English Teaching, Pos. 11		
Pronunciación y Práctica Oral (Inglés)/ Pronunciation and Oral Practice (English), Pos. 15		
Métodos, Recursos Didácticos y Técnicas de Investigación/ Methods, Teaching Resources, and Research Techniques , Pos. 33-34		
Information technologies are introduced, and the ability to be discerning contributes to learning and citizenship training and promotes cultural richness.	17142- Didáctica de la Lengua Inglesa I. Grado Maestro Ed. Prim/ Teaching Methodology for English Language I. Bachelor's Degree in Primary Education, Pos. 6	
Competences related to interculturality are very present. To develop them, they work with content such as online resources, content creation and evaluation tools, interactive whiteboards, collaborative tics, and websites.	Nuevas tecnologías aplicadas a la enseñanza del inglés/ New Technologies Applied to English Language Teaching /, Pos. 21	

It relates the use of ICT and collaborative work, with special emphasis on applications as a resource: learning to use and apply new technologies in learning English, working in teams, collaborating, and taking on leadership roles.	Contenido y lenguaje integrado de aprendizaje/(Content and Language Integrated Learning (CLIL), Pos. 7
The aim is to apply technologies as a didactic resource to promote learning based on understanding and critical capacity related to constructs such as empathy or critical evaluation.	Didactica de la lengua inglesa/ Teaching Methodology for the English Language, Pos. 28
	Mención lengua extranjera: Didáctica de la Cultura de la Lengua/, Foreign Language Specialization: Teaching Methodology for the Culture of the Language.Pos. 15
	Mencion lengua extranjera: Enseñanza y Aprendizaje de la Lengua/ Foreign Language Specialization: Teaching and Learning of the Language, Pos. 17
	Mención en Lengua Extranjera: Contenidos Curriculares/Curricular Contents, Pos. 32
	Tecnologías de la Información y la Comunicación para la Enseñanza de la lengua Extranjera/ Information and Communication Technologies for Foreign Language Teaching, Pos. 10
	Idioma Extranjero y su Didáctica (Inglés)/ Foreign Language and Its Didactics (English), Pos. 20
	Procesos y Recursos para la Enseñanza-Aprendizaje de la Lengua Extranjera(Inglés)/ Processes and Resources for Foreign Language Teaching and Learning (English), Pos. 10
	Recursos Culturales y Literarios para la Enseñanza de la Lengua Extranjera (Inglés)/ Cultural and Literary Resources for Foreign Language Teaching(English), Pos. 10
	Mención:Procesos y Recursos para la Enseñanza de la Lengua Extranjera(Francés)/ Specialization: Processes and Resources for Foreign Language Teaching and Learning (French), Pos. 10
	Mención: Recursos Culturales y Literarios para la Enseñanza de la Lengua Extranjera (French) / Specialization: Cultural and Literary Resources for Foreign Language Teaching (French), Pos. 10
	Mención: Comunicación Oral y Escrita en la Lengua Extranjera Ing/ Specialization: Oral and Written Communication in the Foreign Language (English), Pos. 10
	Mención : Lingüística para la Enseñanza de la Lengua Extranjera I/ Specialization: Linguistics for Foreign Language Teaching I, Pos. 10
	Mención: Tecnologías de la Información y la Comunicación para enseñanza de la Lengua Extranjera/ Specialization: Information and Communication Technologies for Foreign Language Teaching, Pos. 9

	Idioma Extranjero y su Didáctica (Francés)/ Foreign Language and Its Didactics (French), Pos. 21
	Idioma Extranjero y su Didáctica (Inglés), Pos. 21
The aim is to apply technologies to promote their use based on understanding, critical capacity, safety, and mastery.	Didáctica del francés lengua extranjera/ Teaching Methodology for French as a Foreign Language Pos. 33
Technologies are used not only for didactic purposes but also to foster communicative competence and collaboration. This can be seen in the actions indicated as sharing, with a strong interdisciplinary component.	Contenido y lenguaje integrado de aprendizaje/ Content and Language Integrated Learning (CLIL), Pos. 6
The aim is for students to have the ability to access and be familiar with ICT in foreign language teaching/learning processes, which may favour access to teaching resources and promote awareness among future teachers of the importance of their use.	Lengua extranjera II: Inglés / Foreign Language II: English/ Foreign Language II: English, Pos. 11

Subject names are presented in their original language along with our own translation)The most dominant competency performance focuses on ICT as a didactic and pedagogical resource to favour the acquisition of the FL or the use of ICT for their training process and professional performance in a generic way. It has also been established as a channel for information management: search, selection, presentation, and use. It is also contemplated as a performance to improve oral and written production through ICTs: ‘The responsible use of ICTs for the written production of reports in English’ or ‘The use of ICTs for oral and written production in distance communication.’ It is also contemplated as content along with other contents to be explored, such as the media, the weather, the environment, or transportation.

Discussion

The findings showcased in the previous section of this study reveal significant insights that align with our research questions. In exploring how pre-service teacher trainers incorporate intercultural perspectives through CALL in FLT contexts (RQ1), it becomes evident that a disjointed relationship exists between digital competence and interculturality. Many teaching guides include digital elements or resources in competencies (Table 4) but often fail to establish a cohesive connection between technology and intercultural competence. This gap reflects the findings of Bilki et al. (2023), who argue that critical digital literacy within virtual exchanges is essential for developing intercultural competence in teacher education yet remains underutilised. Similarly, Bisol et al. (2015) demonstrate that although virtual learning tools can

assist in teacher training for inclusion, they often lack alignment with intercultural communication objectives.

Engen (2019) emphasises the cultural and social dimensions of digital competence, suggesting that while digital tools are increasingly integrated into education, they are often employed without a specific focus on fostering interculturality. This instrumental use of ICT is evident in many teaching guides, which prioritize functional uses of technology but lack the critical intercultural components that Eren (2023) argues are necessary for raising cultural awareness through telecollaboration.

The importance of incorporating intercultural perspectives through technology is echoed by Tafazoli (2024), who highlights the interplay between language, technology, and culture in promoting a comprehensive understanding of intercultural competence. To address these challenges, teacher training programmes must focus on innovative uses of technology, such as virtual exchanges and online collaborative projects, that explicitly aim to develop intercultural skills alongside linguistic competencies. By doing so, educators can create meaningful intercultural interactions that extend beyond mere communication and promote a deeper understanding of diverse cultures. Thus, while technology in pre-service training is a positive step, a structured approach to explicitly incorporate intercultural perspectives through digital platforms is essential.

The findings indicate a fragmented relationship in addressing how pre-service teacher trainers foster empathy, social skills, and emotional resilience (RQ2) through integrating intercultural competence and soft skills acquisition. The teaching guides often emphasise communication skills, such as written and oral production, without adequately linking them to digital competence or interculturality. Llorente-Cejudo et al. (2023) found that social inclusion and digital competence are validated as distinct areas with limited overlap. This compartmentalization resonates with the work of Rets et al. (2023), which emphasises that intercultural effectiveness is often developed through virtual exchanges. However, the cultivation of soft skills like empathy is not sufficiently integrated into this process.

The role of emotional resilience and empathy is notably absent from many teaching guides, representing a missed opportunity to connect these soft skills with digital and intercultural competencies. Sardegna and Dugartsyrenova (2021) highlight the importance of voice-based telecollaboration in facilitating intercultural learning, yet such tools remain underutilised in structured teacher education programmes for promoting empathy and social skills. This disconnect underscores the need for a more integrated approach, where the acquisition of soft skills is directly tied to intercultural competence and technological

proficiency, as Baybayon (2021) suggested in the context of the Universal Design for Learning (UDL) framework.

Moreover, Ok and Rao (2019) assert that digital tools can play a crucial role in fostering inclusivity and supporting soft skills development in the classroom, further highlighting the need for an integrated strategy. Research indicates that experiential learning methods, such as service learning and critical reflection, effectively nurture empathy and social skills in educators. However, Shadiev and Yu (2024) point out that the connection between technology and fostering empathy remains tenuous. While technology can facilitate connections across cultures, the emphasis on soft skills development often remains implicit or overlooked.

The analysis indicates that pre-service teacher trainers address intercultural perspectives and soft skills acquisition in fragmented ways. While technology is present, its connection to intercultural competence is often weak, and fostering empathy, social skills, and emotional resilience is treated separately from both digital and intercultural competencies. This echoes the findings of Bilki et al. (2023) and Bisol et al. (2015), suggesting that teacher education programmes need to adopt a more cohesive framework that integrates interculturality, digital literacy, and soft skills development into a unified pedagogical strategy.

The pedagogical implications of this study highlight the need for a more consistent integration of CALL, intercultural competence and soft skills development in teacher education programmes. The findings highlight how digital tools can be used strategically to go beyond traditional language teaching by developing critical soft skills such as empathy, adaptability and cultural awareness alongside language skills. Teacher training curricula should not only equip future educators with the technical skills to use digital platforms, but also ensure that these tools are used to create meaningful intercultural interactions and inclusive learning environments. In addition, embedding interculturality in CALL frameworks can help educators foster students' understanding of diversity and global citizenship, in line with the broader goals of modern education. This study calls for a pedagogical shift that bridges the current gap between digital and intercultural literacies, emphasising the potential of technology as a transformative medium for intercultural learning and soft skills acquisition. Such an integrated approach can better prepare educators to navigate the complexities of diverse technology-mediated classrooms and promote inclusive, culturally responsive teaching practices.

Conclusion

The findings highlight the significant role that CALL plays in modern language education, providing diverse and dynamic methods for fostering intercultural competence and inclusion. Educators can employ digital tools to create engaging, interactive, and personalised learning experiences that cater to diverse student needs. These technological applications enhance linguistic skills and promote critical soft skills such as empathy, adaptability, and cross-cultural understanding. The integration of CALL into teacher training curricula ensures that future educators are well-equipped to leverage technology in promoting inclusive and effective language learning environments.

The analysis reveals a disconnect between digital competence and interculturality in pre-service teacher training, with technology often lacking a strategic focus on enhancing intercultural skills (Bilki et al., 2023; Bisol et al., 2015; Engen, 2019). Additionally, while soft skills like empathy are acknowledged, their development remains a lower priority, leading to a missed opportunity to effectively cultivate emotional resilience and intercultural understanding in future educators (Llorente-Cejudo et al., 2023; Sardegna & Dugartsyrenova, 2021).

Despite the comprehensive nature of this study, certain limitations must be acknowledged. Firstly, the analysis was restricted to course syllabi and may not fully capture the practical implementation of technology and intercultural practices in classroom settings. Additionally, the focus on public universities in Spain limits the generalizability of the findings to other educational contexts. There is also a potential bias in the selection and interpretation of course materials, which might not accurately represent the broader spectrum of instructional practices across different institutions.

Future research should aim to address these limitations by incorporating direct observations and qualitative interviews with educators and students to gain deeper insights into the practical application of CALL in promoting intercultural competence. Expanding the scope of research to include international contexts would provide a more comprehensive understanding of global best practices in FLT. Furthermore, longitudinal studies tracking the long-term impact of CALL-integrated teacher training on both educators' professional development and students' learning outcomes would offer valuable data on the efficacy and sustainability of these pedagogical approaches.

In conclusion, the findings underscore the necessity for a holistic approach in pre-service teacher training programmes. By integrating technology with intercultural competence and emphasising the development of essential soft skills, teacher trainers can better prepare future educators for the complex dynamics of global classrooms. Bridging these areas can lead

to more effective language teaching and a deeper understanding of the cultural contexts in which educators operate, ultimately equipping them with the tools necessary to navigate and thrive in diverse educational environments. By addressing the identified limitations and pursuing further research, educators, and policymakers can better understand and optimize the use of digital technologies in fostering a more inclusive and culturally responsive educational landscape.

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Note

We refer to ‘teaching syllabus’ as the document containing the curricular elements of the course: objectives, competences, contents, methods, assessment criteria, etc. This document is the didactic planning of the course and has to be implemented by the teacher/trainer in charge.

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