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INTERCULTURAL TRAINING THROUGH XR-INSPIRED SCENARIOS IN ESP FOR TOURISM

Abstract

Developing intercultural communicative competence (ICC) is essential for Tourism students operating in multilingual, culturally diverse environments where English functions as a global lingua franca. This study investigates the use of extended reality (XR), specifically a low-threshold digital escape room, to foster ICC within an English for specific purposes (ESP) course for Tourism. Designed using *Genially*, this XR-inspired escape room presents interactive, narrative-based scenarios informed by real-world intercultural challenges, such as solo travel and generational differences. Learners navigate multimedia prompts, branching decision paths, and embedded feedback while resolving dilemmas involving culturally diverse tourists. A mixed-methods approach was adopted, combining pre- and post-intervention questionnaires based on the intercultural sensitivity scale (ISS) (Chen & Starosta, 2000) with qualitative data from students' reflective journals. Findings suggest increased intercultural sensitivity, enhanced pragmatic competence, and greater confidence in cross-cultural communication. Likewise, students demonstrated improved strategies for managing misunderstandings and adapting language use. This study contributes to XR-enhanced ESP pedagogy by showcasing how accessible XR tools can simulate complex intercultural encounters. It offers a replicable model for embedding ICC into ESP instruction through immersive, gamified learning, supporting learners' readiness for professional success in the global tourism industry.

Key words

intercultural communicative competence (ICC), English for specific purposes (ESP), Tourism education, extended reality (XR), gamification.

1. INTRODUCTION

The tourism industry is shaped by intercultural encounters, multilingual communication, and the need to manage complex interactions in real time. As English continues to function as a global lingua franca across tourism services and international mobility (House, 2018; Mauranen, 2015), university students preparing for careers in the sector must develop both domain-specific language skills and the ability to interpret, negotiate, and adapt to diverse cultural expectations. Intercultural communicative competence (ICC), which includes attitudes, knowledge, skills of interpretation and interaction, and critical cultural awareness (Byram, 2021; Deardorff, 2006), has therefore become a key learning outcome in ESP curricula for Tourism. Yet, despite its recognised importance, traditional ESP instruction often fails to provide learners with meaningful opportunities to face intercultural challenges in ways that mirror professional realities. Existing classroom practices tend to rely on decontextualised case studies, short simulations, or explicit cultural instruction, approaches that have been criticised for insufficient authenticity, limited experiential depth, and their tendency to oversimplify cultural phenomena (Baker, 2017; Byram & Masuhara, 2013; Liddicoat & Scarino, 2013).

At the same time, extended reality (XR) technologies – which involve virtual reality (VR), augmented reality (AR), and mixed reality (MR) – have gained visibility in higher education because of its potential to create immersive, interactive, and rich learning environments (Christou et al., 2025; Radianti et al., 2020). Research in applied linguistics and language education highlights XR's affordances for simulating authentic communicative scenarios, increasing presence and engagement, and supporting experiential forms of language learning (Coleman & Derry, 2023; Dhimolea et al., 2022). Studies in VR-mediated intercultural exchange, empathy-oriented simulations, and 360-degree video experiences also demonstrate XR can help develop intercultural sensitivity, challenge stereotypes, and foster reflection on cultural perspectives (Berti et al., 2020; Gruber & Wagner, 2024; Li et al., 2020; Shadiev et al., 2020).

However, even though much of the current research focuses on highly immersive VR systems, social VR platforms, or technologically-complex interventions requiring specialised hardware (Chen & Sevilla-Pavón, 2023; Gruber et al., 2023), these methods are often costly, logistically demanding, or institutionally inaccessible, thus limiting their applicability in many ESP contexts. Consequently, there is a growing need to explore how XR-supported but non-fully immersive tools (e.g., XR-inspired environments such as digital simulations), can provide key immersive features through design, not hardware. These environments may not offer strict sensory immersion, but they can still support experiential learning by allowing narrative freedom, simulated spatial movement, varied input, and interaction with context-rich scenarios.

Despite this growing interest, research exploring XR specifically within ESP for Tourism, where intercultural communicative challenges are particularly salient, remains scarce. A few studies have examined VR-mediated intercultural encounters in language-learning contexts (DeWitt et al., 2022; Yeh et al., 2022), but there is limited evidence on XR-inspired environments contributing to ICC development in university settings. Finally, although scenario-based learning, authenticity, and task-based approaches are central to ICC pedagogy (Chun, 2015; Ellis, 2009; Herrington & Oliver, 2000), their connection with gamified XR-supported formats such as digital escape rooms is underexplored, particularly regarding how students interpret and handle branching intercultural dilemmas in such setups or how these experiences influence their intercultural reasoning and decision-making.

The present study addresses these gaps by examining the use of a low-threshold XR-inspired digital escape room implemented in an ESP course for undergraduate Tourism students. Designed using *Genially*, a web-based interactive platform, the escape room simulates key XR features through interactive storytelling, spatial navigation, multimedia prompts, and embedded feedback. These design elements allow students to engage with context-rich, professionally relevant situations that reflect intercultural challenges common in tourism including solo travel interactions, generational differences in expectations, and culturally mediated communication breakdowns. These scenarios require learners to interpret culturally situated behaviours, negotiate meaning, and adapt their linguistic choices, encouraging reflective engagement consistent with ICC and English as a lingua franca (ELF)-aware pedagogies (Canagarajah, 2006; Sharifian, 2013).

Building on this rationale, the main objective of this study is to explore the pedagogical potential of low-threshold XR tools to foster ICC within an ESP course for Tourism. To achieve this goal, the paper addresses the following research questions (RQs):

1. To what extent does a low-threshold XR escape room contribute to the development of learners' ICC (e.g., intercultural sensitivity, awareness and self-efficacy) within an ESP for Tourism context?
2. What intercultural strategies, interpretative processes and pragmatic adaptations do learners demonstrate while navigating the branching dilemmas embedded in the XR escape room?
3. How do students evaluate the effectiveness, authenticity and professional relevance of XR-inspired scenarios for preparing them to manage real-world intercultural encounters in tourism settings?

The following section reviews the theoretical and empirical foundations underpinning this study, with a focus on ICC in ESP, XR in language education, and scenario-based learning.

2. LITERATURE REVIEW

2.1. Intercultural communicative competence (ICC) in tertiary ESP education

ICC is widely recognised as an essential outcome within tertiary-level ESP programmes, particularly in professional domains characterised by high levels of mobility, culturally diverse clientele, and service-oriented communication such as Tourism (Byram, 2021; Durko & Martens, 2021). ICC frameworks conceptualise intercultural ability as a combination of attitudinal dispositions, cultural and sociolinguistic knowledge, interpretative skills, and adaptive communicative behaviour (Byram & Masuhara, 2013; Deardorff, 2006; Liddicoat & Scarino, 2013). Within ESP research, ICC is conceived of as an integral component of professional and disciplinary communication rather than as a secondary competence (James, 2025; Zhao & Li, 2025).

Recent research underscores that ESP learners, especially those preparing for globalised service industries, require pedagogical experiences that foreground intercultural interpretation, negotiation of meaning, and the management of communicative ambiguity rather than decontextualised cultural facts (Casoli-Uvsløkk & Brevik, 2023; Mu & Yu, 2023). Nonetheless, providing such experiences within conventional classroom structures remains challenging. Even though role-plays, case studies and explicit cultural instruction have been used to integrate interculturality into ESP courses, these approaches often risk oversimplifying cultural phenomena or failing to represent the dynamic, emergent, and interactional nature of real intercultural encounters (Baker, 2017; Chun, 2015).

This pedagogical challenge has led to increasing interest in leveraging digital technologies, particularly immersive and interactive ones, to approximate authentic intercultural conditions within controlled instructional environments.

2.2. XR technologies and immersive learning in ESP and language education

XR technologies have emerged precisely in response to the need for more experiential, embodied, and context-rich learning environments. XR's affordances – including spatial presence, heightened engagement, and multimodal stimulus exposure – hold considerable promise for foreign language and ESP education (Christou et al., 2025; Radianti et al., 2020). Evidence from VR-supported language learning shows that immersive simulations can improve learners' pragmatic competence, contextual awareness, and intercultural sensitivity by placing them in realistic communicative scenarios that mirror professional practice (Blyth, 2018; Shadiev et al., 2020, 2023).

Although XR offers powerful pedagogical opportunities, its adoption in tertiary ESP programmes remains uneven. Many studies rely on high-end VR headsets, specialised facilities, or bespoke software solutions (DeWitt et al., 2022; Gruber et al., 2023), which limits scalability and accessibility. This has led researchers in ESP and applied linguistics to focus on XR-supported tools that are not fully immersive, like 360-degree video, interactive web-based simulations, and gamified XR-like environments, which provide immersive qualities without the logistical complexity of full VR (Coleman & Derry, 2023; Rupp et al., 2019; Sato & Kageto, 2020; Tecedor & Vasseur, 2020).

This shift towards more accessible technologies provides a natural bridge to research on technology-mediated intercultural learning, where experiential and interactional opportunities have traditionally been designed using online platforms rather than fully immersive systems.

2.3. Technology-mediated intercultural learning: Virtual exchange, gamification, and scenario-based approaches

Virtual exchange (VE) and telecollaboration constitute the largest body of research on intercultural learning mediated through technology (Dooly & Vinagre, 2022; O'Dowd, 2018; O'Dowd & Dooly, 2021). VE studies demonstrate that online intercultural encounters can foster perspective-taking, empathy, negotiation strategies, and deeper cultural awareness (Avgousti, 2018; Higgins, 2024; Lenkaitis, 2021). However, VE often requires international partnerships, synchronous communication, and sustained interaction over time, conditions that many institutions find difficult to maintain (Baroni et al., 2019; Helm, 2016).

As a result, researchers have looked for alternative ways to simulate intercultural experiences through gamified narratives, branching dilemmas, and scenario-based tasks. Gamification and scenario-based learning have shown particular potential for fostering intercultural reflection because they expose learners to complex, ambiguous situations requiring strategic decision-making (Crane et al., 2017; Kusumaningputri & Widodo, 2018). In ESP contexts, such tasks are especially useful because they incorporate intercultural complexities into professional scenarios (Ellis, 2009; James, 2025; Michelson & Petit, 2017). More recently, XR-inspired gamified tools, such as digital escape rooms or interactive simulations, have emerged as practical options for integrating immersive intercultural tasks without the infrastructural demands of full VR (Di Fuccio et al., 2024; Knutzen et al., 2025).

These developments highlight a convergence between immersive XR affordances and the pedagogical logic of VE and gamified intercultural learning, pointing toward hybrid models that are both experiential and institutionally feasible.

2.4. Affective and contextual considerations in online and XR-supported ESP learning

Across all forms of technology-mediated learning (e.g., VE, XR, gamified tasks), affective and contextual variables play a central role in shaping learners' engagement and performance. Research by Topalov et al. (2023) demonstrates how different communication modes can influence learners' anxiety and willingness to participate in online ESP environments. Other studies by Bobkina and Domínguez Romero (2025) and James (2025) stress the importance of contextualised, task-oriented learning to enhance engagement and critical thinking in specific fields.

In intercultural learning, immersive or interactive settings can create emotional and cognitive imbalance, encouraging learners to question their assumptions and engage in critical reflection, which are referred to as essential processes to ICC development (Furstenberg & English, 2016; McConachy, 2017). Yet such environments must be carefully scaffolded to avoid reinforcing stereotypes or perpetuating superficial representations of culture (Helm et al., 2012; Liu & Zhang, 2020). This balance between immersive experiences and pedagogical responsibility is particularly important in XR-supported ESP tasks, where immersion is achieved through narrative and interaction rather than sensory overload.

2.5. Gaps

In light of the above, it is important to note that ICC theory, immersive language learning, and technology-mediated intercultural pedagogy converge on the need for authentic, reflective, and experiential tasks in ESP higher education. Unfortunately, notable gaps still persist.

First, despite the intercultural demands of tourism communication, few studies explore how XR-inspired environments can foster ICC development in ESP for Tourism (Avgousti, 2018; Lenkaitis, 2021). Second, most XR research still focuses on high-end immersive systems, leaving a gap in empirical evidence for low-threshold, scalable XR interventions suitable for institutions without VR infrastructure (Di Fuccio et al., 2024; Knutzen et al., 2025). Third, while VE research highlights the value of intercultural interaction (Dooly & Vinagre, 2022; O'Dowd, 2018; O'Dowd & Dooly, 2021), little is known about whether self-contained, gamified XR scenarios (e.g., interactive escape rooms) can effectively develop ICC by engaging learners in decision-making, problem-solving, and reflection.

To address these gaps, the present study examines a *Genially*-based, XR-inspired digital escape room designed to replicate intercultural tourism scenarios. By integrating immersive features into this digital escape room, the study directly responds to recent calls in ESP research for learning designs that are practical, accessible, and relevant to professional contexts (Crane et al., 2017; Higgins, 2024; Kusumaningputri & Widodo, 2018).

3. METHODOLOGY

3.1. Research design

This study adopts a descriptive mixed-methods case-study design to investigate the impact of an XR-inspired digital escape room on the development of ICC among undergraduate Tourism students enrolled in an ESP course. This design was selected to capture changes in learners' intercultural sensitivity and their experiences with intercultural challenges in an XR-like scenario.

The quantitative component examined changes in self-reported intercultural sensitivity before and after the intervention by means of pre- and post-intervention questionnaires (see the Appendix) based on the intercultural sensitivity scale (ISS) (Chen & Starosta, 2000) and additional items adapted from Zhou (2011). The qualitative component explored learners' interpretative processes, emotional responses, and developing intercultural awareness through reflective journals. Integrating these two strands enabled a comprehensive analysis of cognitive, affective, and behavioural aspects of ICC development within this specific educational context.

3.2. Participants and context

Twenty undergraduate tourism students, enrolled in a compulsory C1-level ESP module at a Spanish university, participated in the study. The module focused on professional communication, service encounters, and intercultural competence within tourism settings. English served both as the target language and as the lingua franca for all instructional and assessment activities.

All participants (n = 20) completed all research instruments and engaged in the XR escape-room intervention. The students, 65% female and 35% male, were between 19 and 21 years old, multilingual to varying degrees, and predominantly Spanish nationals. Several participants reported previous international experience through travel, study-abroad programmes, or internships.

The course followed a blended-learning format, combining weekly face-to-face instruction with an online autonomous task – in this case, the digital escape-room activity – to accommodate scheduling constraints. None of the participants had prior experience with XR-based learning or digital escape rooms in language education.

Participation in the study was voluntary, and informed consent was obtained from all students in line with institutional ethics requirements.

3.3. XR escape room intervention

The intervention consisted of an interactive digital escape room designed using *Genially*, chosen for its accessibility, multimodal affordances, and capacity to create

interactive, narrative-driven scenarios without specialised XR hardware. The activity was conceived of as a form of low-threshold XR, incorporating spatial orientation, multimodal prompts (e.g., text, audio, image and short video), interactive hotspots and immediate embedded feedback to simulate key features of immersive learning and to promote narrative agency. Tasks were tightly mapped to the study's ICC learning objectives and required students to interpret cultural cues, negotiate meaning in English and make contextually appropriate communicative choices under time constraints. Scaffolding was provided through stepwise clues, a help option and pre-task orientation to ensure accessibility for learners with no prior XR exposure. The escape room ran as an autonomous online task within the blended-learning timetable; interaction logs and timestamped responses were recorded to enable analysis of decision processes and task engagement.

3.3.1. Scenario focus: Solo travel and intercultural challenges

The narrative framework of the escape room centred on solo travel, a pedagogically rich and increasingly relevant theme within contemporary tourism studies. Solo travel foregrounds a wide range of intercultural variables – divergent expectations regarding autonomy, safety, service quality, and interpersonal communication – which makes it an ideal context for eliciting intercultural reasoning and pragmatic adaptability from learners. Within this framework, students assumed the role of front-desk or customer-service staff supporting an international cohort of solo travellers whose needs, behaviours, and communicative styles reflected different cultural, generational and linguistic backgrounds.

The escape room comprised five sequential scenarios, each grounded in authentic service encounters typical of front-line tourism roles. These scenarios required learners to navigate culturally divergent interpretations of politeness, directness and urgency, and generational differences in behaviour. Additional tasks required interpretation of cultural expectations and variable concepts (e.g., "vegetarian," "safety" and "service expectations"), resolution of misunderstandings in ELF interactions, and management of indirect or ambiguous requests.

Scenario difficulty was intentionally scaffolded. Initial tasks emphasised comprehension, clarification and identification of intercultural cues; intermediate challenges required negotiation, accommodation and pragmatic adjustment; and final missions engaged learners in resolving intercultural dilemmas under time pressure. This progression aimed to stimulate the development of higher-order ICC skills, with each scenario explicitly mapped onto established ICC domains, including attitudes (e.g., curiosity and openness), knowledge (e.g., cultural and sociolinguistic awareness), skills of interpreting and relating, skills of discovery and interaction, and critical cultural reflection (Byram, 2021; Deardorff, 2006).

Finally, all scenarios were aligned with ESP-relevant communicative competences for tourism professionals, including service-oriented interaction, conflict mediation, polite assertiveness, rapport-building, and clear ELF-based

communication. This ensured that learners' intercultural decision-making remained anchored to the practical demands of tourism workplaces.

3.3.2. Interactional structure and embedded feedback

Students navigated the escape room through a sequence of multimodal inputs (e.g., videos, audio prompts, simulated chat exchanges, images, and concise text instructions) designed to emulate key affordances of XR environments through interactional and narrative design rather than sensory immersion. At predetermined decision points, learners were required to choose among alternative responses, each triggering a branching narrative path that altered subsequent events and interactional conditions. Immediately after each decision, students received embedded, context-sensitive feedback explaining the pragmatic appropriateness of their choice, its potential intercultural implications, and possible alternative strategies. This design promoted continuous reflection, raising learners' awareness of culturally conditioned expectations and encouraging them to consider how different linguistic and paralinguistic choices could influence the outcome of intercultural encounters.

The activity required approximately 30-40 minutes to complete and was undertaken autonomously offsite to maximise ecological validity in learners' decision-making. No instructor intervention was provided during the task, although optional help buttons offered graded hints to prevent excessive cognitive load and ensure task completion.

3.4. Instruments

Three instruments were employed to collect quantitative and qualitative data: a pre-intervention survey; a post-intervention survey; and reflective journals produced by the participants after completing the XR escape-room activity. All instruments were designed to capture complementary dimensions of ICC, including intercultural sensitivity, awareness, self-efficacy and reflective engagement with multicultural service-encounter scenarios.

3.4.1. Pre-survey

The pre-survey was administered to the students prior to the intervention. Its primary purpose was to establish participants' baseline dispositions related to ICC, including attitudes toward cultural difference, awareness of culturally mediated communication, and confidence in managing intercultural interactions in English. It also collected demographic and contextual information to characterise the sample.

The instrument consisted of four sections:

1. **Section A: Background information**. Items elicited participants' gender, age, nationality, languages spoken, previous international experience (study, work or travel), and self-assessed English proficiency (A2-C1).
2. **Section B: Intercultural sensitivity and respect**. This section drew on items adapted from the intercultural sensitivity scale (ISS) (Chen & Starosta, 2000). Items assessed enjoyment of intercultural contact, respect for cultural values and communication styles, comfort with linguistic variation, and awareness of potential misunderstandings in ELF settings.
3. **Section C: Intercultural awareness and reflection**. Items adapted from Zhou (2011) and informed by ICC descriptors (Byram, 2021; Deardorff, 2006) assessed participants' ability to identify cultural assumptions in communication, interpret indirect or ambiguous messages, understand culturally variable concepts (e.g., politeness norms, terminology, service expectations), and recognise how cultural backgrounds influence communication in tourism contexts.
4. **Section D: Self-efficacy and confidence**. This section measured perceived communicative competence in intercultural encounters, including flexibility in expressing respect and empathy, capacity to handle misunderstandings, conflict-management skills, and ability to adjust tone, vocabulary and pragmatic strategies depending on interlocutors' cultural profiles.

All items used the same four-point Likert scale to ensure consistency and avoid central tendency bias.

3.4.2. Post-survey

The post-survey was administered after the completion of the XR escape-room intervention. The instrument replicated all items from the pre-survey to enable direct comparison of changes across the domains of intercultural sensitivity, awareness and communicative self-efficacy. In addition, it incorporated one further section specific to the intervention experience.

The structure of the post-survey comprised:

1. **Sections A–D**. All background, sensitivity, awareness and self-efficacy items from the pre-survey were repeated verbatim to allow for matched-pair analysis of changes resulting from the intervention. This parallel structure ensured full comparability with the baseline data.
2. **Section E: Post-intervention reflection on XR experience**. This section assessed learners' perceptions of the pedagogical value of the escape room. Items examined the perceived authenticity of the scenarios, the motivational impact of gamification, the perceived relevance to real-world intercultural communication in tourism, the usefulness of embedded feedback for reflection, and the effectiveness of *Genially* to practise complex ICC skills. Like all previous sections, responses used a four-point Likert scale.

A final open-ended question invited participants to comment on their experience of the XR activity, generating additional qualitative data that complemented the reflective journals.

3.4.3. Reflective journals

Reflective journals constituted the qualitative component of the study and were used to triangulate the quantitative findings by providing insight into the cognitive, affective and strategic mechanisms underlying learners' ICC development. After completing the XR escape room and the post-survey, students submitted individual reflective journals of approximately 250-300 words. Journals were written within 24-48 hours of task completion to maximise immediacy and reduce retrospective reconstruction.

To ensure comparability across participants while allowing for introspective depth, journals were guided by three structured prompts: (a) a pivotal communication choice made in the escape room and its consequences; (b) a stereotype or assumption they noticed and how they addressed it; (c) a strategy they plan to transfer to real practice. Entries supplied rich qualitative evidence of intercultural reasoning and self-regulation, including their ability to identify cultural cues, adjust tone and register, employ mitigation or clarification strategies, manage conflict, and engage in perspective taking. Students were encouraged to comment not only on their reasoning but also on moments of uncertainty, frustration, empathy or surprise, thereby providing rich affective and metacognitive data.

For analysis, all entries were anonymised and subjected to inductive thematic coding. Extracts were categorised into themes relating to affective responses, pragmatic strategy use, intercultural awareness, and intentions for behavioural transfer. Recurrent patterns were then examined alongside individual pre- and post-survey scores to identify potential mechanisms of change. In this way, the reflective journals complemented the survey data by revealing how and why the XR intervention influenced learners' emerging intercultural competence.

3.5. Procedure

The study followed a three-phase procedure to ensure systematic data collection, minimise instructional disruption and preserve the ecological validity of the XR intervention.

Before the intervention, the participants were briefed on the study's aims and the voluntary and anonymous nature of their participation. Students completed the pre-survey during class time under supervised conditions, which ensured standardised administration, reduced missing data and established baseline levels of intercultural sensitivity, awareness and communicative self-efficacy.

During the intervention phase, they received a short technical orientation on how to access and navigate the *Genially*-based XR escape room; however, no cultural or linguistic guidance was provided in order to preserve the authenticity of the decision-making processes. The participants completed the XR escape room collaboratively at home, allowing them to engage with the digital environment at their own pace.

Upon completing the XR activity, students accessed the post-survey, which included all ICC-related items from the pre-survey and added an intervention-specific section. In addition to completing the post-survey, they also submitted reflective journals, which provided rich qualitative data.

3.6. Data analysis

The study utilized a mixed-methods analytical design. Quantitative and qualitative datasets were analysed separately and then integrated to create an evidence-based account of the XR intervention's effects on learners' ICC. The quantitative strand captured measurable variation in ICC-related items, while the qualitative strand offered explanatory insight into the cognitive, emotional, and pragmatic processes underlying those changes.

3.6.1. Quantitative data

Quantitative analyses were conducted using IBM SPSS Statistics (version 28) (IBM Corp., 2021). The dataset was first checked for completeness, outliers, and invalid values. Normality was assessed through Shapiro–Wilk tests and visual inspection; when assumptions were not met, nonparametric tests were applied. Composite means were calculated for the three ICC domains (Sections B–D), with negatively worded items reverse-coded. Internal consistency was confirmed through Cronbach's alpha.

To analyse development over time, paired-samples *t*-tests were used to compare pre- and post-intervention scores of the participants. Cohen's *d* was calculated to estimate the magnitude of effect sizes for these longitudinal gains. In this regard, 0.2 is considered small, 0.5 medium, and 0.8 large (Cohen, 1988). To strengthen the validity of the study, the quantitative outcomes were triangulated with qualitative findings derived from students' reflective journals.

Post-intervention responses (Section E) were analysed descriptively through means and standard deviations (SD) to explore learners' perceptions of the XR experience, including its realism, feedback, motivational value, and accessibility.

3.6.2. Qualitative data

Reflective journals and open-ended survey comments were analysed using inductive thematic analysis (Braun & Clarke, 2021). The aim was to identify how

students interpreted intercultural cues, navigated pragmatic choices, regulated emotions and articulated emergent ICC awareness during the XR activity.

Analysis proceeded through repeated readings, line-by-line coding and categorisation into themes related to cultural interpretation, affective responses, pragmatic adaptation and intended transfer to professional contexts. Themes were subsequently cross-referenced with ICC frameworks (Byram, 2021; Deardorff, 2006; Liddicoat & Scarino, 2013) to ensure conceptual alignment.

Trustworthiness was supported through consensus coding of a subset of journals, and anonymisation procedures. The final themes were compared with quantitative patterns to identify mechanisms of change.

The qualitative analyses therefore provided process-level insight into how learners engaged with intercultural complexity in the XR environment and clarified how the intervention fostered ICC development in an ESP-for-Tourism context.

4. RESULTS AND DISCUSSION

This section presents the results of the descriptive case study, focusing on the longitudinal development of ICC among the participants (n = 20). The quantitative findings from the pre- and post-intervention surveys are combined with qualitative insights collected through reflective journals and open-ended comments.

4.1. Pre-surveys

The pre-intervention data established a baseline of the participants' intercultural dispositions. Overall, participants showed high levels of intercultural awareness, but moderate levels of self-efficacy in complex communicative tasks. Table 1 summarises the mean scores for the three main domains under study.

Subscale	Pre-intervention mean
B. Sensitivity & respect	3.16
C. Awareness & reflection	3.23
D. Self-efficacy	3.06

Table 1. Overview of ICC participants' profiles from the pre-surveys

4.1.1. Intercultural sensitivity and respect

As shown in Table 2, the respondents had a positive attitude towards communicating with people from other cultures. Mean scores for items such as the enjoyment of intercultural interaction (B1 = 3.60), respect for cultural values (B2 = 3.60) and awareness of ELF misunderstandings (B5 = 3.60) indicate a high degree of openness and general intercultural knowledge.

Item	Construct	Pre-mean
B1	Enjoyment of intercultural interaction	3.60
B2	Respect for cultural values	3.60
B3	Avoidance of ethnocentric judgement	3.20
B4	Reflection on cross-cultural interpretation	3.30
B5	Awareness of ELF misunderstandings	3.60
B6	Interpretation of nonverbal cues	3.10
B7	Comfort with accents/varieties	3.10
B8	Anxiety in intercultural English (reverse-coded)	1.80
B9	Confidence when communicating interculturally	3.30
B10	Adaptation of English communicative style	3.00

Table 2. Pre-survey results: Intercultural sensitivity and respect

It should be noted that participants reported low levels of anxiety when using English in intercultural settings in item B8 = 1.80, which was reverse-coded. When considered alongside their self-confidence (B9 = 3.30), these findings suggest the subjects approached the XR intervention with greater communicative comfort, an important contextual factor later evident in their qualitative reflections.

4.1.2. Intercultural awareness and reflection

Participants' awareness of culturally conditioned communication was generally consistent across most items, with relatively high scores in areas related to the impact of culture on tourism communication (C10 = 3.60). As shown in Table 3, learners demonstrated a strong ability to recognise that politeness norms may vary (C1 = 3.40) and were able to interpret indirect requests (C3 = 3.40):

Item	Construct	Pre-mean
C1	Variation in politeness norms	3.40
C2	Identification of cultural assumptions	3.20
C3	Interpretation of indirect requests	3.40
C4	Confidence with acronyms and jargon	2.50
C5	Variation in service norms	3.20
C6	Influence of cultural backgrounds in tourism	3.20
C7	Recognition of potential impoliteness	3.30
C8	Appropriateness for clients	3.10
C9	Reflection on intercultural experiences	3.40
C10	Impact of culture on tourism communication	3.60

Table 3. Pre-survey results: Intercultural awareness and reflection

Despite these patterns, a lower score was identified in item C4 (Confidence with acronyms and jargon = 2.50). This indicates that even students with a good

command of the target language may feel less confident when domain-specific pragmatic strategies need to be employed in ELF contexts, such as the use of acronyms or specialised terminology. For this reason, the inclusion of such elements within XR-inspired scenarios can provide learners with opportunities to engage in real-world tourism communication.

4.1.3. Self-efficacy in intercultural encounters

As observed in Table 4, the lowest mean scores were identified in items linked to participants' self-efficacy in intercultural communication. This reveals that students felt less confident in their actual performance skills compared to their sensitivity.

Item	Construct	Pre-mean
D1	Expression of empathy across cultures	3.00
D2	Polite management of misunderstandings	3.20
D3	Confidence in expressing opinions	3.20
D4	Adjustment of tone and vocabulary	3.10
D5	Use of clarification strategies	2.80
D6	Management of conflicts	3.20
D7	Mediation of intercultural conflicts	3.10
D8	Perceived role of XR in ICC development	2.90

Table 4. Pre-survey results: Self-efficacy in intercultural encounters

Across all items, the participants reported moderate levels of perceived communicative confidence. For instance, learners felt capable of handling misunderstandings (D2 = 3.20), expressing opinions (D3 = 3.20), and managing intercultural conflicts politely (D6 = 3.20). Items requiring active communicative management, such as the use of clarification strategies (D5 = 2.80) showed lower levels of perceived self-efficacy. These findings suggest that the participants entered the intervention with a stronger self-perception of their intercultural communicative resources but felt less equipped to manage communicative dilemmas.

Taking all this into account, none of the pre-intervention scores approached ceiling effects, leaving room for further development in XR scenarios. This is a critical condition for meaningful learning gains, particularly in affective and behavioural domains of ICC.

4.2. Post-surveys: Changes after the XR intervention

Following completion of the XR-inspired escape room, the respondents showed measurable changes across all three domains of ICC, with reliability remaining high (α = .81–.88). Small-to-medium gains were observed in B. Sensitivity and respect (+0.11) and in C. Awareness and reflection (+0.05), in contrast to D. Self-efficacy,

which experienced a slight decrease (-0.12). This decline in self-reported efficacy should not be interpreted as a negative learning outcome or a regression in competence. Instead, this reflects students' awareness of their own communicative limitations. Table 5 illustrates an overview of the pre–post differences:

Subscale	Pre-mean	Post-mean	Difference
B. Sensitivity & respect	3.16	3.27	+0.11
C. Awareness & reflection	3.23	3.28	+0.05
D. Self-efficacy	3.06	2.94	-0.12

Table 5. Overview of pre–post changes

4.2.1. Intercultural sensitivity and respect

The most consistent gains were observed in Section B, which captures affective openness and comfort in intercultural interaction (see Table 6). Post-intervention data show modest but positive shifts in most items, particularly in learners' enjoyment of intercultural engagement. Notably, item B8 (reverse-coded for anxiety) rose from 1.80 to 2.20 (d = 0.62), suggesting reduced apprehension and increased perceived control when using English in intercultural contexts, an effect consistent with the low-pressure, game-based nature of the XR environment.

Item	Construct	Pre-mean	Post-mean	Difference
B1	Enjoyment of intercultural interaction	3.60	3.80	+0.20
B2	Respect for cultural values	3.60	3.70	+0.10
B3	Avoidance of ethnocentric judgement	3.20	3.30	+0.10
B4	Reflection on cross-cultural interpretation	3.30	3.30	0.00
B5	Awareness of ELF misunderstandings	3.60	3.70	+0.10
B6	Interpretation of nonverbal cues	3.10	3.20	+0.10
B7	Comfort with accents/varieties	3.10	3.10	0.00
B8	Anxiety in intercultural English (reverse-coded)	1.80	2.20	+0.40
B9	Confidence when communicating interculturally	3.30	3.20	-0.10
B10	Adaptation of English communicative style	3.00	3.20	+0.20

Table 6. Pre–post changes: Intercultural sensitivity and respect

4.2.2. Intercultural awareness and reflection

Although the overall mean for Section C showed only a slight increase, item-level analysis reveals meaningful developments in learners' interpretive and reflective capacities. As shown in Table 7, improvements were observed in item C8 (+0.40), which directly aligns with the XR escape room's emphasis on evaluating communicative appropriateness across culturally diverse guest profiles. Item C4

also showed a moderate increase (+0.40), indicating improved confidence in decoding acronyms and other pragmatic cues commonly encountered in professional tourism contexts.

Item	Construct	Pre-mean	Post-mean	Difference
C1	Variation in politeness norms	3.40	3.40	0.00
C2	Identification of cultural assumptions	3.20	3.10	-0.10
C3	Interpretation of indirect requests	3.40	3.20	-0.20
C4	Confidence with acronyms and jargon	2.50	2.90	+0.40
C5	Variation in service norms	3.20	3.20	0.00
C6	Influence of cultural backgrounds in tourism	3.20	3.20	0.00
C7	Recognition of potential impoliteness	3.30	3.30	0.00
C8	Appropriateness for clients	3.10	3.50	+0.40
C9	Reflection on intercultural experiences	3.40	3.40	0.00
C10	Impact of culture on tourism communication	3.60	3.60	0.00

Table 7. Pre–post changes: Intercultural awareness and reflection

The growth in C4 and C8 reflects the pedagogical impact of embedded feedback within the XR scenarios, which guided learners to consider why specific linguistic choices might be more suitable for guests from different cultural backgrounds (e.g., Japanese, Brazilian, Emirati). This supports existing research on XR-mediated learning, which highlights the value of branching scenarios in fostering situated metapragmatic awareness (Radianti et al., 2020).

The declines in items C2 (-0.10) and C3 (-0.20) may reflect a more critical reassessment rather than a loss of competence after encountering more nuanced communicative dilemmas in the XR-inspired scenarios. As for items C9 and C10, these remained stable at high levels, indicating consolidation of learners' reflective habits and their belief in the relevance of cultural understanding for effective tourism communication. These results suggest that the XR intervention reinforced existing dispositions while deepening learners' ability to evaluate appropriateness and decode pragmatic complexity in intercultural service encounters.

4.2.3. Self-efficacy and professional readiness

Post-intervention scores in Section D show a modest overall decline (see Table 8), yet this shift is best interpreted as a recalibration of learners' self-perceptions rather than a reduction in actual competence. This pattern, widely documented in intercultural learning research, reflects the "competence awareness dip" or "calibration effect" (Deardorff, 2006; Mattar, 2018), whereby learners reassess their communicative abilities after engaging with complex, authentic intercultural scenarios.

Item	Construct	Pre-mean	Post-mean	Difference
D1	Expression of empathy across cultures	3.00	3.20	+0.20
D2	Polite management of misunderstandings	3.20	2.90	-0.30
D3	Confidence in expressing opinions	3.20	2.90	-0.30
D4	Adjustment of tone and vocabulary	3.10	2.80	-0.30
D5	Use of clarification strategies	2.80	2.90	+0.10
D6	Management of conflicts	3.20	3.20	0.00
D7	Mediation of intercultural conflicts	3.10	2.80	-0.30
D8	Perceived role of XR in ICC development	2.90	2.80	-0.10

Table 8. Pre–post changes: Self-efficacy and professional readiness

At the item level, some dimensions remained stable, most notably D6 (managing conflicts politely), which held at 3.20, suggesting consolidation of core interpersonal strategies. In contrast, the most prominent shifts occurred in items requiring nuanced self-assessment, such as handling misunderstandings (D2), adjusting tone and vocabulary (D4), and mediating intercultural conflict (D7). The decreases in these areas show that learners became more careful and thoughtful when assessing their skills in situations that require awareness and flexible decision-making. As regards items D1 and D5, some gains were reported in empathy and clarification strategies (+0.20 and +0.10, respectively), pointing to an emerging but still developing understanding of pragmatic repair tools.

Rather than indicating disengagement, this shift may reflect learners' growing awareness that ICC development requires ongoing practice, reflection, and guided instruction beyond a single XR-inspired intervention. Thus, this recalibration is not a regression, but an indicator of metacognitive growth. According to Deardorff (2006), self-efficacy develops gradually and consolidates through repeated, autonomous decision-making in realistic contexts. The XR-inspired intervention provided precisely such a context, allowing students not only to practise intercultural communication but also to reassess how they see themselves as future professionals.

4.2.4. Perceptions of the XR experience

Post-intervention survey responses revealed strong learner endorsement of the XR escape room as an engaging and pedagogically valuable tool. As shown in Table 9, most items in Section E scored above 3.00 on a 4-point Likert scale, with 62-77% of participants agreeing or strongly agreeing with statements regarding authenticity, motivation, and preparedness for real-world intercultural encounters. The gamified format, multimodal input, and scenario-based structure were consistently highlighted as strengths by learners.

Item	Construct	Post-mean	SD
E1	XR realism	3.20	0.51
E2	Motivation	3.20	0.51
E3	Preparedness	2.90	0.45
E4	Feedback	3.10	0.48
E5	Effectiveness of low-threshold XR	3.10	0.48

Table 9. Post-survey results: Perceptions of the XR experience

Students' open-ended responses further contextualise these quantitative trends. Several participants reported that the activity was both enjoyable and instructive, providing an opportunity to practise English in realistic tourism contexts. For instance, one student noted (example 1):

> (1) It was fun and different from normal activities. It showed me different perspectives due to cultural misunderstandings. (S1)

Another student highlighted the relevance for professional development (example 2):

> (2) This XR experience is a less stressful way to apply our knowledge than our regular class workload. It helps us learn how to interact with guests from different cultural backgrounds. (S2)

Many students reflected on the intercultural dimension of the activity, noting how scenario-specific language adaptation and empathetic communication were essential for success (example 3):

> (3) I learned that we have to treat everyone with respect and empathy, but the words used in interactions may not be the same for everyone depending on their cultural background or age. (S4)

Finally, participants emphasised that XR allowed them to simulate real-life tourism situations in a safe and low-stakes environment, enhancing both confidence and awareness (example 4):

> (4) The activity poses situations that could happen in real life and helps players reflect on how they would act. It is intuitive and challenging, and working in groups helps us interact and discuss our ideas. (S5)

In sum, the combination of high agreement scores in Section E and consistent qualitative commentary indicates that learners perceived the XR escape room as authentic, motivating, and practically useful. The integration of dilemmas and culturally nuanced tasks appears to have fostered reflection, intercultural awareness, and readiness for professional encounters in the tourism sector.

4.3. Reflective journals

Learners' reflective journals (RJ) provided rich qualitative insight into how the XR scenarios prompted a re-evaluation of communicative assumptions, emotional responses, and intercultural strategies. Analysis revealed four dominant themes: heightened sensitivity to cultural variation, development of adaptive pragmatic strategies, enhanced perspective-taking and empathy, and recognition of ICC as essential for professional tourism practice.

Students frequently acknowledged that communicative norms vary significantly across cultures. The Japanese scenario elicited particularly nuanced reflections, with learners noting the need for indirectness and heightened politeness (example 5):

> (5) The most challenging moment for me was in the Japan scenario, where Aiko's email used very indirect language to gently suggest a room change. At first, I felt unsure: was she actually asking for something, or just being polite? […] I remembered that in Japanese culture, preserving harmony often means avoiding direct requests. That realization shifted my approach […] responding with extra care and offering alternatives proactively helped resolve the situation respectfully. (RJ6)

These responses demonstrate the development of interpretive ICC, the ability to decode meaning shaped by cultural values (Byram, 2021; Radianti et al., 2020). Similarly, the German–Mexican conflict scenario triggered metapragmatic awareness and dual perspective-taking (example 6):

> (6) In my opinion, the most difficult situation was the 'Hostel Conflict.' As young people, we may naturally understand the Mexican customer's preference for partying, but after putting ourselves in the German man's place, we realized we had to find a solution that fulfills both customers' needs. [...] My strategy now is to practice active listening [...]. This helps prevent stereotypes and allows us to apply specific solutions for specific situations. (RJ14)

This capacity to hold multiple viewpoints reflects the relational dimension of ICC and aligns with the internal outcomes described in Deardorff's (2006) model.

Learners also described modifying tone, register, and message structure to maintain rapport and avoid miscommunication. Strategies included softening language, using inclusive phrasing, and simplifying English for clarity (examples 7-9):

> (7) We deliberately softened our language […] asking 'What do you think?' to avoid face-threatening moves. (RJ1)

> (8) I adjusted my tone to mediate […] using neutral, inclusive phrasing. (RJ11)

> (9) We realised that slang or informal tone confused the team […] so I simplified my English consciously. (RJ8)

These reflections reveal growing awareness of pragmatic appropriateness, an essential skill in ELF contexts and one that is difficult to capture through quantitative measures alone. Students also reported avoiding acronyms, anticipating misunderstandings, and clarifying ambiguous expressions, indicating a shift toward strategic language use.

Emotional and identity responses were also prominent. The Germany–Mexico conflict was consistently cited as the most emotionally challenging, requiring learners to balance competing needs and manage interpersonal tension (examples 10 and 11):

> (10) I could understand both sides […] we needed to find a solution that fulfilled both needs. (RJ12)

> (11) In this situation what helped to solve the scenario was just to try balancing fairness and I remember how important being emotionally intelligent is when dealing with these kinds of situations. […] my takeaway from this activity is to approach cultural misunderstandings by not only solving the client's issue but also offering alternative solutions to show genuine care about the client's problem and provide a sense of satisfaction with the services. (RJ1)

Affective reactions such as confusion, empathy, and stress were frequently linked to professional growth. One student captured the broader significance of the experience (example 12):

> (12) This XR experience truly opened my eyes […] English isn't just a language. It's a bridge shaped by culture […] my strategy will be simple but powerful: pause, reflect on cultural context, and respond with empathy, not assumptions. (RJ11)

This emerging professional stance reflects the XR design's goal of fostering intercultural empathy and aligns with findings in XR learning research (Shadiev et al., 2023).

Finally, students consistently connected the XR experience to future workplace demands. Many articulated clear strategies for handling intercultural interactions in professional tourism settings (examples 13 and 14):

> (13) The simulation showed me that communication is not only about language, but about understanding cultural expectations. One concrete strategy I will use is active clarification: instead of assuming meaning, I will politely ask follow-up questions to confirm what the guest truly needs. I also plan to apply 'cultural neutralization,' which means choosing language that avoids cultural bias or assumptions. For instance, I will use simple, universal explanations and avoid sarcasm, irony, or

> idioms that could confuse guests from different countries. This helps create a more inclusive environment and reduces the risk of offending someone. (RJ13)
>
> (14) I believe this experience helped us see different real-life situations and apply what we have learned. I always say that studying theory is important, but it's when you actually experience and apply that knowledge when you really learn. I think that to handle cultural misunderstandings in the tourism field, professionals should have this type of activities. They really help us to get to know other cultures and be more prepared, so when we face challenges like the ones in this escape room, we know how to handle them in the best way possible. (RJ15)

These statements indicate a shift toward actionable ICC, characterised by intentional, strategic communicative behaviour and a growing sense of professional identity, a key outcome in the field of ESP instruction (Coleman & Derry, 2023).

So far, the reflective journals confirm that the XR escape room fostered deeper cultural awareness, more flexible use of English as a lingua franca, greater interpretive precision, and a clearer understanding of the interpersonal demands of tourism communication. These qualitative findings provide strong explanatory support for the quantitative shifts observed in the post-survey.

5. CONCLUSIONS

This study set out to examine the pedagogical potential of a low-threshold XR escape room for supporting the development of ICC in an ESP for Tourism course. Drawing on a mixed-methods case-study design, the research addressed three interrelated questions concerning (1) measurable changes in ICC-related dispositions, (2) the intercultural strategies learners demonstrated when navigating branching scenarios, and (3) students' perceptions of XR-inspired learning for real-world tourism communication.

Regarding RQ1 (To what extent does a low-threshold XR escape room contribute to the development of learners' ICC [e.g., intercultural sensitivity, awareness and self-efficacy] within an ESP for Tourism context?), the quantitative results revealed modest but meaningful gains in intercultural sensitivity and awareness, particularly in areas such as recognising culturally conditioned expectations and interpreting indirect communication. In contrast, self-efficacy scores in the post-intervention phase decreased to a certain extent (-0.12) This trend can be interpreted as a recalibration of learners' self-perceptions following exposure to more complex and authentic intercultural scenarios (Deardorff, 2006). After engaging with the XR-inspired activity, students became more aware of the challenges that can be found in professional communication, which may have led them to become more cautious in their self-assessments. This shift reflects a more realistic understanding of intercultural mediation, including the cognitive and pragmatic demands involved in real-world tourism contexts dilemmas. Hence, these

findings support the view that ICC development is a non-linear process, in which increased awareness may coexist with a lower perceived confidence.

RQ2 (What intercultural strategies, interpretative processes and pragmatic adaptations do learners demonstrate while navigating the branching dilemmas embedded in the XR escape room?) focused on the intercultural reasoning and adaptive strategies learners demonstrated during the activity. Reflective journals provided rich qualitative evidence of students' engagement with intercultural dilemmas. Learners showed increased sensitivity to cultural assumptions and an ability to balance politeness, directness, and emotional regulation in professional interactions. These reflections help explain the quantitative patterns observed, as the XR intervention fostered reflection among the participants, which is key for ELF environments in the tourism sector.

In relation to RQ3 (How do students evaluate the effectiveness, authenticity and professional relevance of XR-inspired scenarios for preparing them to manage real-world intercultural encounters in tourism settings?), students' perceptions of the XR-inspired scenarios were overwhelmingly positive. Survey responses and open-ended comments highlighted the escape room's accessibility, motivational value, and relevance to professional practice. Learners appreciated the authenticity of the scenarios, the embedded feedback, and the opportunity to rehearse complex interactions in a low-risk environment. These insights reinforce the pedagogical viability of XR-inspired tools in ESP instruction, demonstrating that meaningful experiential learning does not require high-end immersive technologies when tasks are pedagogically grounded and contextually relevant.

Nonetheless, several limitations must be acknowledged. First, the case study design, together with its small sample size, may prevent the generalisation of the results. Secondly, the reliance on self-report instruments may introduce potential bias, and the offsite completion of the XR activity occasionally led to technical issues that may have affected engagement. Additionally, while reflective journals offered valuable insights, they represent retrospective accounts and may not fully capture in-task reasoning. Third, the study did not incorporate instructor-mediated follow-up activities, which may be necessary to support the consolidation of intercultural learning over time. In this regard, the inclusion of structured pedagogical support, such as guided debriefings and reflective workshops could have helped learners to consolidate and internalise the gains achieved during the simulation.

Despite these limitations, the findings offer important implications for ESP and ICC pedagogy. XR-supported tools appear especially well suited for tourism education, where communicative decisions are shaped by cultural expectations, emotional labour and pragmatic demands. The study demonstrates that such tools can make intercultural learning more experiential by immersing students in realistic dilemmas that require adaptive linguistic use and strategic choices. When integrated thoughtfully into ESP curricula, XR tools can complement explicit instruction, foster reflective practice, and support the gradual development of professional ICC.

Future research could expand on these findings in several ways. Longitudinal studies with larger and more balanced groups would enable stronger causal claims and allow researchers to examine the durability of ICC gains over time. Comparative studies could explore how different XR design features shape learning processes and outcomes. Finally, extending research to professional tourism settings could explore how XR-mediated training translates into real interactional practices.

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Appendix

The questionnaire

SECTION A. BACKGROUND INFORMATION

Item	Description
A1	Gender
A2	Age
A3	Nationality
A4	Languages spoken
A5	Previous international experience (study/travel/work)
A6	Self-assessed English proficiency (A2–C1)

SECTION B. INTERCULTURAL SENSITIVITY AND RESPECT

Item	Statement	1	2	3	4
B1	I enjoy interacting with people from different cultures.				
B2	I respect the cultural values and communication styles of people from other countries.				
B3	I try to avoid judging people from other cultures by my own cultural standards.				
B4	I often reflect on how my words might be understood differently by people from other cultures.				
B5	I am aware that misunderstandings can occur even when we all speak English.				
B6	I find it easy to understand nonverbal communication used by people from other cultures.				
B7	I feel comfortable when conversations involve different accents or varieties of English.				

Item	Statement	1	2	3	4
B8	I feel anxious when I have to speak English in intercultural situations. *(reverse-coded)*				
B9	I am confident when communicating in English with people from different cultural backgrounds.				
B10	I can adapt my English communication style depending on the listener's cultural background.				

SECTION C. INTERCULTURAL AWARENESS AND REFLECTION

Item	Statement	1	2	3	4
C1	I am aware that cultural norms shape how politeness or directness is expressed in English.				
C2	I can identify cultural assumptions that affect how I use English in professional settings.				
C3	I can interpret indirect requests or veiled suggestions in written English from a customer.				
C4	I feel confident navigating professional English communication when acronyms or jargon are used.				
C5	I understand that cultural concepts (e.g., "vegetarian", "service expectations") may vary across cultures.				
C6	I can describe how cultural backgrounds influence communication in tourism contexts.				
C7	I can recognise when a message may sound impolite or unclear due to cultural differences.				
C8	I can explain why certain expressions may be more or less appropriate for specific clients.				
C9	I reflect on my intercultural experiences to improve my professional communication.				
C10	I believe that understanding culture helps me use English more effectively in tourism.				

SECTION D. SELF-EFFICACY AND CONFIDENCE

Item	Statement	1	2	3	4
D1	I can use English flexibly to express respect and empathy across cultures.				
D2	I can handle intercultural misunderstandings in English professionally and politely.				
D3	I am confident in expressing my opinions in intercultural discussions.				
D4	I can adjust my tone and vocabulary depending on the interlocutor's cultural background.				
D5	I can use strategies (e.g., paraphrasing, clarification) to maintain smooth communication.				
D6	I can manage conflicts in English without sounding rude or distant.				
D7	I can mediate a conflict between people from different cultural backgrounds.				
D8	I believe XR and simulations help improve my intercultural and linguistic competence.				

SECTION E. POST-INTERVENTION REFLECTION ON XR EXPERIENCE

Item	Statement	1	2	3	4
E1	The XR scenarios simulated realistic communication challenges in tourism contexts.				
E2	The gamified format increased my motivation to learn about intercultural communication.				
E3	I feel more prepared for real-world intercultural interactions in my professional field.				
E4	The embedded feedback enhanced my reflection on communication choices.				
E5	Using *Genially* is an effective and accessible way to practise intercultural communication skills.				

Final open-ended question

Item	Statement
E6	Please comment on your experience with the XR activity.