CULTURAL INTELLIGENCE AND INTERCULTURAL SENSITIVITY IN PRE-SERVICE FOREIGN LANGUAGE TEACHERS: TOWARD SUSTAINABLE TEACHER EDUCATION

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Highlight
The study examines the relationship between pre-service foreign language teachers' levels of cultural intelligence and their intercultural sensitivity; it also emphasizes the need to systematically integrate training in cultural intelligence and intercultural sensitivity into teacher education programs to support sustainable and inclusive education systems.

Abstract
This research explores the connection between intercultural sensitivity and cultural intelligence in preservice foreign language teachers in Türkiye. A total of 237 students from the Foreign Language Education departments of two public universities took part in the study. Data collection tools included the Intercultural Sensitivity Scale by Chen and Starosta (2000) and the Cultural Intelligence Scale by Ang et al. (2007). The analysis revealed that the participants generally exhibited high levels of cultural intelligence, while their intercultural sensitivity ranged from moderate to high. Gender-based analysis showed that female participants had significantly higher cultural intelligence than their male counterparts. However, no significant differences emerged regarding participants' international experience or media use, except among those who frequently communicated with individuals from other cultures—this group demonstrated higher levels of cultural intelligence. Furthermore, a statistically significant, moderate positive correlation ($r = .421$, $p < .001$) was identified between intercultural sensitivity and cultural intelligence. These outcomes underscore the importance of incorporating intercultural competence and cultural responsiveness into teacher training curricula to better prepare future educators for meaningful intercultural interactions in diverse educational contexts.

Keywords
Intercultural Sensitivity, Cultural Intelligence, Foreign Language, Teacher Education, Sustainable Pedagogy.

Introduction

Globalization has significantly increased interaction between cultures around the world, creating an urgent need for communication across cultural boundaries. In intercultural communication, people with different cultural backgrounds, values, behavioral norms, and linguistic differences (Kartarı, 2014; Lüsebrink, 2008) exchange information, ideas, emotions, and thoughts. During these interactions, individuals must understand each other's language and cultural codes, demonstrate empathy toward others' values, and maintain flexibility and tolerance even in the face of misunderstandings. In this context, future generations must receive an education that enhances their communication and interaction skills and enables them to understand the "other" (Banks, 1992). Intercultural communication competence encompasses the knowledge, skills, and attitudes necessary to understand and communicate effectively across cultural domains (Casse, 1981; Deardorff, 2006). It includes understanding other cultures, developing cultural awareness, and evaluating situations from alternative perspectives.

Additionally, Obermaier (2003) identifies personality strength, tolerance, the ability to sustain social relationships, intelligence, goal orientation, and the recognition of mutual benefits as essential traits for intercultural competence. Social skills such as language proficiency, communication abilities, and the application of these competencies in unfamiliar cultural contexts are also vital. The advancement of communication technologies and the increase in international exchanges have amplified the frequency and necessity of intercultural communication. According to Zakaria (2000), intercultural competence involves understanding the perspectives and behaviors of individuals from different cultures without falling into misinterpretations, requiring the ability to empathize and evaluate situations from others' viewpoints. Intercultural communication competence is assessed in three dimensions (Chen & Starosta, 1997, 2003; Chen, 2009; Gertsen, 1990). The cognitive dimension represents intercultural awareness. It enables individuals to understand and evaluate different cultural practices and beliefs. The affective dimension refers to intercultural sensitivity. It enables

individuals to develop sensitivity to different cultural codes and to empathize with others. The last one, the behavioral dimension, refers to intercultural competence and enables them to communicate appropriately in various cultural environments. The cornerstone of intercultural competence is the ability to distinguish between what is acceptable and what is not (Beier, 2006).

Intercultural sensitivity represents the emotional component of intercultural communication competence and describes a person's openness and respectful attitude toward the beliefs, customs, and viewpoints of other cultures (Cırık, 2008). Chen and Starosta (2000) define this concept in five dimensions: engaging in intercultural interactions, respecting differences, having confidence in interactions, deriving enjoyment from interactions, and being mindful during intercultural communication. Schneider (2005) defines intercultural sensitivity as "an individual's ability to comprehend, reflect upon, and understand the values, norms, traditions, behavioral rules, and worldviews of their own and other cultures," while Brinkmann (2011) highlights it as a core component of intercultural competence, which is a prerequisite for effective intercultural interaction. Chen (1997) emphasizes that although intercultural sensitivity relates to emotional, cognitive, and behavioral interactions, it is primarily rooted in affect. Fritz at al. (2004) describe intercultural sensitivity as the emotional need to accept or appreciate another culture. Similarly, Bhawuk and Brislin (1992) argue that intercultural sensitivity includes the ability to set aside one's own prejudices in order to understand, validate, respect, and accept other cultures. Chen and Starosta (1997) note that individuals with intercultural sensitivity are willing to understand, validate, and accept differences, while Earley and Ang (2003) suggest that the ability to interact harmoniously with a different culture is not solely based on language skills, but rather on a person's cultural intelligence. As highlighted by Chen and Starosta (2003), the essence of intercultural communication lies in intercultural awareness, which entails recognizing cultural variations and thoughtfully considering their role in interpersonal exchanges. Moreover, intercultural communication is an interaction process shaped by culturally determined patterns of perception and interpretation (Lüsebrink, 2008). Possessing this capability is essential for successful communication and adaptation in multicultural environments.

It is believed that individuals with this ability possess a different type of intelligence. Numerous studies and definitions related to intelligence have approached intelligence from different angles and with various theories. With the emergence of Gardner's "Theory of Multiple Intelligences," Sternberg's "Triarchic Theory of Intelligence," and Thordike's "Classification of Intelligence," many studies have been conducted on different types of intelligence. Within the scope of intelligence models, emotional, social, and cultural dimensions have attracted considerable academic attention. Emotional intelligence, as explained by Salovey and Mayer (1990), encompasses the ability to detect, interpret, and manage emotional experiences in oneself and others. This ability includes recognizing one's own emotional state and that of others, being able to empathize, and behaving appropriately. Social intelligence entails establishing effective interpersonal relationships and understanding others (Thorndike, 1920). Cultural intelligence, as proposed by Earley and Ang (2003), refers to the capability to manage diverse teams, understand individuals from different nations and institutions, and collaborate effectively across cultural boundaries (Dyne at al., 2005). With the expansion of cross-border interactions in the contemporary world, the ability to communicate and cooperate effectively with individuals from different cultural settings has grown in importance. In this context, cultural intelligence is vital for nurturing intercultural understanding and facilitating peaceful and respectful international engagement. Cultural intelligence encompasses the capacity to interact effectively with individuals from diverse cultural backgrounds, adjust one's behavior to fit varying cultural contexts, and accomplish tasks successfully (Ang et al., 2007). Similarly, intercultural communication competence involves the ability to respond appropriately and effectively in intercultural encounters, grounded in relevant knowledge, skills, and attitudes (Wiseman, 2002). This perspective underscores not only the necessity of behavioral flexibility but also the significance of emotional attributes such as empathy and openness. Cultural intelligence has increasingly been identified as a pivotal construct for enabling individuals to collaborate productively in multicultural environments.

In today's globalized world, where professional and social interactions frequently span cultural boundaries, Cultural intelligence contributes significantly to effective communication, cooperation, and conflict resolution. Notably, scholars emphasize that cultural intelligence is not a static trait but a dynamic and learnable competence that can be enhanced through structured educational programs, cross-cultural experiences, and reflective practices (Thomas, 2005; Triandis, 2006; Dyne et al., 2010; MacNab & Worthley, 2012). The theoretical model developed by Earley and Ang (2003) conceptualizes cultural intelligence as comprising four key dimensions. The metacognitive dimension refers to an individual's ability to consciously reflect on and regulate cultural assumptions during intercultural interactions. It includes planning, monitoring, and adjusting one's cultural

understanding while engaging with individuals from different backgrounds. The cognitive dimension pertains to one's knowledge about the norms, practices, and conventions of various cultures, often obtained through education or direct cultural exposure. This dimension reflects the informational base an individual draws upon to navigate cultural differences. The motivational component involves the interest, confidence, and intrinsic drive to initiate and sustain intercultural interactions. Individuals with high motivation in this area are more likely to overcome anxiety or uncertainty in cross-cultural contexts and are eager to learn about other ways of life (Dyne et al., 2008). Lastly, the behavioral dimension concerns the capacity to exhibit appropriate verbal and non-verbal actions when interacting with people from diverse cultures. This includes adapting tone of voice, gestures, or social etiquette to align with culturally expected behaviors, thereby enhancing mutual understanding and respect.In sum, cultural intelligence encapsulates a comprehensive skill set that underpins effective intercultural functioning, making it a critical focus for both research and practice in teacher education, business, and international collaboration.It has been stated that cultural intelligence, which is related to strategy, knowledge, motivation, and behavior, also has four dimensions; that cultural intelligence, which can vary from person to person, is not a personality trait but a type of intelligence that can be influenced by personality traits; and that it can be developed through education, experience, and certain characteristics. Although cultural intelligence varies among individuals, it is not a personality trait but can be influenced by personal characteristics, education, and experience (Dyne et al., 2008). Individuals with high cultural intelligence demonstrate adaptability, effective communication, conflict resolution, and respect for cultural norms (Earley & Ang, 2003; Bücker et al., 2015). Research shows that these individuals can navigate between cultures and understand both their own and others' cultural contexts (Ang et al., 2007; MacNab & Worthley, 2012; Templer et al., 2006). Due to many reasons, such as the multifaceted development of international relations, then artificial removal of borders through globalization, and the rapid development of information and communication technologies, learning and using more than one foreign language has become inevitable. Rapid developments encourage people to learn languages that are widely used around the world and, along with this, to understand cultural differences and develop the ability to respond appropriately to cultural nuances in communication. Language learning is not sufficient on its own; culture, which is an important part of language, must also be included, because language and culture are two social elements that cannot be separated from each other. Language is an important element that shapes and develops culture.

The aim of language teaching is not only to teach language skills but also to convey the culture to which that language belongs. In this way, language teaching brings with it cultural teaching and spreads it across different geographical areas, as Krumm (1994) states, learning a foreign language is essentially a quest to access a different culture. Without cultural knowledge, language acquisition becomes incomplete and ineffective (Brown, 2000). Effective foreign language education requires high-quality instruction. Institutions and teachers play a pivotal role. Teachers' motivation, communicative competence, and innovative methods are key to successful learning outcomes (Singh, 2014). Teachers, who play such an important role in students' education, also require high-quality education themselves, and the success of the students they teach is influenced by this. For this reason, in order to have successful teachers, teachers themselves must undergo rigorous training and be equipped with intercultural sensitivity and cultural intelligence (Neumann, 2001), and are able to provide quality education through a good education program. Such preparation enables them not only to master instructional content but also to implement effective teaching practices grounded in intercultural awareness.

Foreign language teachers trained with these characteristics learn how to implement teaching practices and are successful in putting them into practice. Gaining these characteristics is only possible through the necessary education. Therefore, education faculties responsible for training foreign language teacher candidates must be aware of the factors that influence the intercultural sensitivity and cultural intelligence levels of teacher candidates and plan their education accordingly. Gaining these characteristics is not an easy process; it requires time and experience. An individual acquires new knowledge and perspectives through awareness, starting from their level of cultural knowledge, and reflects this knowledge in their behavior. Given this context, teacher education programs must identify and integrate factors influencing teacher candidates' intercultural sensitivity and cultural intelligence. These competencies are not acquired instantly but require time and reflective experience. Cultural knowledge gradually fosters awareness, new perspectives, and behavioral changes.

This research seeks to contribute to the existing body of knowledge by exploring how prospective foreign language teachers perceive intercultural sensitivity and cultural intelligence. The central aim of the study is to examine the association between these two constructs. Accordingly, the study is structured around the following

primary research question: How are foreign language teacher candidates' levels of intercultural sensitivity related to their levels of cultural intelligence? The investigation is further guided by the following sub-questions:

1. What are the levels of intercultural sensitivity and cultural intelligence among foreign language teacher candidates?
2. Do teacher candidates' perceptions regarding intercultural sensitivity and cultural intelligence significantly differ by variables such as gender, prior experience in the target-language country, intention to live in that country, friendships with people from that culture, or exposure to its media?
3. Is there a statistically significant relationship between intercultural sensitivity and cultural intelligence?

Literature Review

In recent years, intercultural sensitivity and cultural intelligence have emerged as two prominent constructs in foreign language education, as they contribute not only to learners' linguistic development but also to their ability to understand diverse cultures and engage effectively in intercultural communication. The increasing emphasis on intercultural communicative competence in language teaching has led researchers to investigate the relationships between these constructs and various cognitive, affective, and academic outcomes among foreign language learners.

Research on intercultural sensitivity has consistently demonstrated that foreign language learners generally exhibit moderate to high levels of intercultural sensitivity. Studies conducted with English as a Foreign Language (EFL) learners in Türkiye have revealed that students tend to display positive attitudes toward cultural diversity and are generally open to intercultural interactions (Gedik Bal, 2020). Similarly, Çiloğlan and Bardakçı (2019) reported a significant positive relationship between intercultural sensitivity and English language achievement, suggesting that learners who are more receptive to cultural differences may achieve better academic outcomes in language learning contexts. Furthermore, Nguyen (2022) found that intercultural sensitivity was positively associated with foreign language learning motivation among Vietnamese university students. The findings indicated that students who demonstrated greater interest in and appreciation of cultural diversity were more motivated to learn a foreign language. Likewise, Taşkın (2021) showed that the integration of intercultural components into language instruction significantly enhanced learners' intercultural sensitivity levels. Similarly, Kürkçüoğlu (2021) found that German language teacher candidates enjoyed participating in intercultural interactions; however, they also experienced anxiety when engaging in such interactions due to perceived inadequacies in their foreign language proficiency. This finding suggests that positive attitudes toward intercultural communication may not always translate into confidence in real-life intercultural encounters, particularly when learners perceive limitations in their linguistic competence.

Evidence from international contexts further supports these findings. Studies conducted with Iranian EFL learners have demonstrated that intercultural training contributes positively to the development of intercultural sensitivity (Rahimi & Soltani, 2011; Pourakbari & Chalak, 2015). Research carried out in Thailand, Poland, and Spain has also highlighted significant associations between intercultural sensitivity and variables such as willingness to communicate, communication apprehension, and intercultural competence (Yenphech et al., 2022; Barrios & Napiórkowska, 2024). Moreover, Aydın et al. (2025) reported that higher levels of intercultural sensitivity were associated with more positive attitudes toward foreign language learning. Empirical research has demonstrated that cultural intelligence is closely related to foreign language learning processes and outcomes. Wang and Yu (2025) demonstrated that cultural intelligence significantly contributes to foreign language learners' intercultural adaptation, communication effectiveness, and overall language learning development. Studies conducted in Türkiye have similarly indicated that EFL learners generally possess relatively high levels of cultural intelligence and that cultural intelligence contributes positively to intercultural communication competence (Bal, 2022; Karadağ, 2022). Furthermore, research involving Iranian EFL learners has revealed significant relationships between cultural intelligence and language achievement, self-efficacy, learner autonomy, and cultural adaptation (Alahdadi & Ghanizadeh, 2017; Taherkhani & Karbakhsh Ravari, 2018).

Recent studies have also suggested that foreign language learning itself may foster the development of cultural intelligence. Wang and Yu (2025) demonstrated that foreign language learning experiences contribute significantly to learners' cultural intelligence development. Likewise, Albalawee (2024) reported that cultural intelligence was positively associated with language learning strategies and academic achievement. Collectively, these findings suggest that intercultural sensitivity and cultural intelligence are complementary constructs that jointly facilitate effective foreign language learning and intercultural communication.

Research Methodology

This research was structured as a correlational study aiming to explore the potential relationship between intercultural sensitivity and cultural intelligence among pre-service foreign language teachers pursuing a Bachelor's degree in Foreign Language Education. The correlational design was deemed suitable for this study, as it enables researchers to examine the degree and direction of associations between naturally occurring variables without manipulating them (Creswell & Creswell, 2018; Fraenkel & Wallen, 2019; Privitera & Ahlgrim-Delzell, 2019). By using this model, the study seeks to uncover whether a statistically meaningful link exists between the two core constructs.

Population and Sample

The target population of this research comprises 237 pre-service foreign language teachers enrolled in the Departments of Foreign Language Education at two state universities in Türkiye during the Spring term of the 2024–2025 academic year. A purposive sampling strategy was adopted, as it enables the deliberate selection of participants who are best suited to provide relevant and meaningful data for the research focus (Cohen, 1988). Data were gathered through demographic information forms and standardized measurement tools administered to all participants. Table 1 presents the frequency and percentage distributions related to the participants' demographic backgrounds and their experiences with international communication.

Table 1: Descriptive Statistics Related to the Sample

Variable	Groups	N	%
Gender	Female	161	67.9
	Male	76	32.1
	Total	237	100
Experience Abroad	Yes	49	20.7
	No	188	79.3
	Total	237	100
Desire to Live Abroad	Yes	198	83.6
	No	39	16.4
	Total	237	100
Friends Abroad	Yes	115	48.5
	No	122	51.5
	Total	237	100
Communication Abroad	I maintain contact	191	80.6
	I do not maintain contact	46	19.4
	Total	237	100

The demographic and international engagement characteristics of the 237 participants are presented above. The gender distribution, with 67.9% female and 32.1% male participants, reflects an imbalanced sample in terms of gender. Only 20.7% of the participants reported having been abroad—an expression that may indicate temporary educational or cultural experiences. Notably, 83.6% expressed a desire to live abroad, suggesting a high interest in intercultural experiences. Nearly half (48.5%) reported having friends from abroad, indicating sustained personal-level cultural interactions. Additionally, 80.6% stated that they currently engage in communication with individuals abroad, emphasizing the continued relevance of intercultural exchange beyond one-time experiences. These findings suggest that the sample demonstrates a relatively high level of intercultural awareness through either direct or indirect engagement with international settings, providing a strong basis for examining the influence of such experiences on cultural sensitivity and intelligence.

Data Collection Instruments

Intercultural Sensitivity Scale

The “Cross-Cultural Sensitivity Scale” developed by Chen and Starosta (2000) and adapted into Turkish by Sülü-Küllü (2014) was used to determine candidates' levels of cross-cultural sensitivity perception. This scale has been widely used in international studies and its validity has been tested in different cultural contexts. This instrument is structured as a five-point Likert-type scale comprising 24 items, with response options ranging from “strongly disagree” to “strongly agree.” Cross-cultural sensitivity is defined as the ability to develop positive feelings toward understanding and accepting cultural differences, and in this regard, emphasis is placed on certain characteristics that individuals should possess in order to promote cross-cultural competence. The scale evaluates five core

dimensions: engagement in intercultural interactions, respect for cultural diversity, confidence in intercultural communication, enjoyment of intercultural exchanges, and attentiveness during such interactions (Chen 2000). The Cronbach's alpha value of the scale adapted into Turkish was calculated as .758 (Sülü-Küllü, 2014).

Cultural Intelligence Scale

The Cultural Intelligence Scale has a wide range of applications in intercultural education, teacher training, and organizational behavior, and is considered an important indicator for understanding teachers' competencies in multicultural classroom environments. In this study, the “strongly disagree,” “disagree,” “undecided,” and “agree” scale developed by Ang et al. (2007) and adapted into Turkish by İlhan and Çetin (2014), which consists of 20 items and is a five-point Likert-type scale with ratings of “strongly disagree,” “disagree,” “undecided,” “agree,” and “strongly agree. The 20-item, five-point Likert-type scale consists of four dimensions: “metacognition,” “cognition,” “motivation,” and “behavior.” The reliability coefficient for the entire Cultural Intelligence Scale is .85.

Data Collection

The data for this study, which was designed using a correlational survey model, were collected from 237 prospective foreign language teachers enrolled in the Departments of Foreign Language Education at various public universities in Türkiye. Prior to data collection, ethical approval was obtained from the Ethics Committee for Research Involving Human Participants at Anadolu University (Approval No: 686884, Date: 26.02.2024). Informed consent was obtained from all participants, and only the responses of those who voluntarily completed all research instruments were included in the analysis. The research process was conducted in accordance with the ethical principles and guidelines approved by the relevant institutional ethics committee. Ensuring voluntary participation, confidentiality, anonymity, and data security constitutes a fundamental requirement in educational research for safeguarding participants’ rights and maintaining the trustworthiness of research findings (Cohen, Manion, & Morrison, 2018). Accordingly, all research data will be stored securely by the researcher and will be accessible only to authorized personnel for scientific purposes. All data were treated confidentially, and participants' identities remained anonymous throughout the study.

Data Analysis

The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS). First, descriptive statistics, including means and standard deviations, were calculated to determine participants’ levels of cultural intelligence and intercultural sensitivity. Subsequently, Pearson correlation analysis was conducted to examine the direction and strength of the relationships between the variables. Correlation analysis is widely used to assess the magnitude and direction of linear relationships between continuous variables (Field, 2018; Pallant, 2020). This analysis method has also been frequently preferred in previous studies examining the relationships between intercultural competence components (Ang et al., 2007; Deardorff, 2006).

Findings and Discussion

The main aim of this study is to examine the level and nature of the relationship between intercultural sensitivity and cultural intelligence among undergraduate students enrolled in Departments of Foreign Language Education at public universities in Türkiye. To address this aim, a correlation analysis was conducted based on participants' scores on the Intercultural Sensitivity Scale and the Cultural Intelligence Scale. The results of these analyses are presented in the following tables.

Research Question 1: What are the levels of intercultural sensitivity and cultural intelligence perceived by prospective foreign language teachers?

In this section, descriptive statistical results, normal distribution assessments, and significance tests related to the scales used are presented in detail in accordance with the sub-questions of the research problem. The findings also include analyses aimed at determining whether the relevant variables differ according to participants’ demographic characteristics.

Table 2: Descriptive Statistics for General Intercultural Sensitivity and Its Sub-Dimensions

Dimension	Minimum	Maximum	Mean ($\bar{x}$)	SD (Standard Deviation)
Interaction	2.43	4.71	3.84	0.38
Respect	1.83	4.67	2.81	0.39
Attentiveness	1.00	5.00	4.24	0.64

Liking	1.00	5.00	1.94	0.81
Self-confidence	2.00	5.00	3.34	0.53

An examination of the data obtained from the participants on the Intercultural Sensitivity Scale reveals that the Interaction dimension (x = 3.84; SD = 0.38) has the highest mean score. This high score indicates that participants possess well-developed skills in engaging in intercultural interaction through digital tools, and they tend to approach communication with individuals from different cultures with ease and positivity.

In contrast, the dimensions of Respect (x = 2.81), Self-Confidence (x = 3.34), and particularly Liking (x = 1.94) reflect relatively lower mean scores. These findings suggest that participants may have limited levels of sympathy toward cultural differences and reduced social proximity, indicating potential challenges in expressing themselves comfortably and confidently during intercultural interactions. The relatively low score in the Respect dimension also points to areas requiring further development in terms of intercultural sensitivity.

The highest mean score was observed in the Attentiveness dimension ($\bar{x}$ = 4.24; SD = 0.64), suggesting that individuals demonstrate a strong tendency to behave carefully, sensitively, and attentively in culturally diverse environments. This highlights that participants generally approach intercultural interactions with conscientiousness and a sense of responsibility.

Table 3: Descriptive Statistics for Overall Cultural Intelligence and its Sub-Dimensions

Sub-Dimension	Minimum	Maximum	Mean ($\bar{x}$)	Std. Dev. (SD)
Metacognitive	2.25	5.00	3.80	0.64
Cognitive	1.50	5.00	3.22	0.58
Motivational	2.60	5.00	3.72	0.67
Behavioral	2.00	5.00	3.75	0.64

When the descriptive statistics for the sub-dimensions of the Cultural Intelligence Scale are examined, it is observed that the highest mean score was obtained in the metacognitive dimension ($\bar{x}$ = 3.80; SD = 0.64). This finding suggests that participants are relatively strong in terms of developing awareness and cognitive strategies during intercultural interactions. The standard deviation of 0.64 indicates noticeable individual differences within this dimension. The cognitive dimension ($\bar{x}$ = 3.22; SD = 0.58) reflects the participants' level of knowledge and understanding about different cultures. The relatively lower mean score in this dimension compared to others implies that participants may have limited intercultural knowledge and terminological competence. The motivational dimension also shows a high mean score ($\bar{x}$ = 3.72), indicating that the participants have a strong willingness and interest in engaging with individuals from other cultures. The standard deviation of 0.67 suggests a moderate level of similarity among participants in terms of their motivational levels. Lastly, the behavioral dimension ($\bar{x}$ = 3.75; SD = 0.64) also demonstrates a high mean score, suggesting that participants tend to exhibit appropriate behaviors in intercultural contexts. However, the standard deviation once again points to distinct individual differences in this regard.

Table 4: Arithmetic Mean Scores and Standard Deviations of Pre-service Teachers' Perceptions of Intercultural Sensitivity and Cultural Intelligence

Variable	N	Min.	Max.	Mean ($\bar{x}$)	Std. Dev.	Skewness Flatness	
Cultural Intelligence	237	1.00	5.00	3.5981	,481	-,611 ,216 ,91 ,428	
Intercultural Sensitivity	237	1.00	5.00	3.29	,54	-,783 ,216 ,358 ,428	

The arithmetic mean scores and standard deviations related to pre-service teachers' perceptions of intercultural sensitivity and cultural intelligence are presented in Table 4. As shown in the table, the mean score for cultural intelligence is 3.59, while the mean for intercultural sensitivity is 3.29. These values indicate that the participants' ability to cope with cultural differences is generally high. Furthermore, the variation in cultural intelligence scores suggests a noticeable diversity in the participants' levels of cultural intelligence. In contrast, the values for intercultural sensitivity suggest that participants are, on average, at a moderate to high level. The standard deviations reflect a reasonable degree of variability in individuals' sensitivity levels. Additionally, in order to determine whether the data collected in the study followed a normal distribution, skewness and kurtosis values were examined, along with histogram graphs. The results of the normality test showed that the skewness and

kurtosis values fell within the acceptable range, indicating an approximately normal distribution (Tabachnick & Fidell, 2013; Hair et al., 2019). Based on these findings, the application of parametric tests was deemed appropriate. To determine whether there were statistically significant differences in cultural intelligence and intercultural sensitivity levels according to the gender variable, an independent samples t-test was conducted. The results of this analysis are presented in the table below.

Table 5: Independent Samples t-Test Results on Pre-Service Teachers' Cultural Intelligence and Intercultural Sensitivity by Gender

Variable	Group	Mean	t	p
Cultural Intelligence	Female	3.74	8.094	.000*
	Male	3.28		
Intercultural Sensitivity	Female	3.29	0.208	.222
	Male	3.28		

According to the results of the independent sample t-test conducted by gender, a significant difference was found in cultural intelligence between genders, t= 8.09, p < .001. The mean cultural intelligence scores of female participants ($\bar{x}$ = 3.74) were significantly higher than those of male participants ($\bar{x}$ = 3.28). This result suggests that women may have more developed skills in terms of cross-cultural cognitive awareness, motivation, and behavioral adaptation. However, there was no significant difference observed in intercultural sensitivity scores between female ($\bar{x}$ = 3.29) and male ($\bar{x}$ = 3.28) participants in terms of cultural sensitivity levels, t = 0.21, p = .222. This finding suggests that cultural sensitivity may be a social cognitive trait that can develop independently of gender. An independent samples t-test was conducted to determine whether there were significant differences in the sample's cultural intelligence and cultural sensitivity levels in the context of the variable of being in the country where they learned the language, and the analysis results are presented in the table below.

Table 6: t-Test Results Regarding Pre-Service Teachers' Cultural Intelligence and Intercultural Sensitivity Based on Whether They Have Stayed in the Target Language Country

Variable	Group	Mean	t	p
Cultural Intelligence	Stayed in the country	3.70	1.761	.221
	Did not stay	3.56		
Intercultural Sensitivity	Stayed in the country	3.27	–0.666	.628
	Did not stay	3.29		

There was no significant difference in the cultural intelligence levels of participants based on whether they had been to the country whose language they learned, t(235) = 1.23, p = .221. Although the average score of individuals who had been to the country whose language they learned ($\bar{x}$ = 3.70) appeared to be higher, this difference was not statistically significant. This suggests that short-term overseas experiences may not have made a direct and significant contribution to the development of cultural intelligence. Similarly, there was no significant difference in cultural sensitivity levels between individuals who had been in the country whose language they learned ($\bar{x}$ = 3.27) and those who had not ($\bar{x}$ = 3.29), t(235) = –0.49, p = .628. This finding suggests that cultural sensitivity may be more related to individual attitudes and values, and that personality and social environment factors may also be influential, rather than experience alone; being in the country whose language they learned did not significantly affect their overall cross-cultural sensitivity levels. An independent samples t-test was conducted to determine whether there were significant differences in the levels of cultural intelligence and cultural sensitivity of the sample in the context of the variable of wanting to live abroad, and the analysis results are presented in the table below.

Table 7: t-Test Results Regarding Pre-Service Teachers' Cultural Intelligence and Intercultural Sensitivity Based on Their Desire to Live in the Country Where the Target Language Is Spoken

Variable	Group	Mean	t	p
Cultural Intelligence	Desire to live abroad	3.70	–0.744	.724
	No desire to live abroad	3.56		
Intercultural Sensitivity	Desire to live abroad	3.27	1.432	.109
	No desire to live abroad	3.29		

There was no significant difference in cultural intelligence levels based on whether they wanted to live in the country whose language they learned, t(235) = –0.74, p = .724. Although the cultural intelligence averages of

individuals who want to live in the country whose language they learned ($\bar{x}$ = 3.70) appear to be higher than those who do not want to live in the country whose language they learned ($\bar{x}$ = 3.56), this difference is not statistically significant. This situation shows that the development of cultural intelligence is not only related to physical cross-cultural experience but also to the individual's active participation, level of social interaction, and cognitive effort. Similarly, no significant difference was found in cultural sensitivity levels, t(235) = 1.43, p = .109. The absence of a statistically significant difference between individuals who wish to live in the country whose language they learned ($\bar{x}$ = 3.27) and those who do not ($\bar{x}$ = 3.29) indicates that cultural sensitivity is shaped more by individual attitudes and social learning processes than by direct desire. An independent samples t-test was conducted to determine whether there were significant differences in the levels of cultural intelligence and cultural sensitivity of the sample in the context of the variable of finding friends abroad, and the analysis results are presented in the table below.

Table 8: Independent Samples t-Test Results Regarding Pre-service Teachers' Cultural Intelligence and Intercultural Sensitivity Levels Based on Whether They Have Friends from the Country of the Target Language

Variable	Group	Mean	T	p
Cultural Intelligence	Have friends	3.61	.689	.078
	Do not have friends	3.57		
Intercultural Sensitivity	Have friends	3.31	1.224	.868
	Do not have friends	3.27		

There was no significant difference in cultural intelligence levels based on having friends abroad, t = 0.69, p = .078. Although the average cultural intelligence scores of individuals with friends abroad ($\bar{x}$ = 3.61) were slightly higher than those without friends ($\bar{x}$ = 3.57), this difference was not statistically significant. This suggests that while friendships may have the potential to contribute to the development of cultural intelligence, this contribution may be limited or indirect. Similarly, no significant difference was found in cultural sensitivity levels, t(235) = 1.22, p = .868. The averages of individuals with friends abroad ($\bar{x}$ = 3.31) and those without ($\bar{x}$ = 3.27) are quite close to each other. This finding suggests that cultural sensitivity may be related to the individual's internal awareness, value system, and experiential learning processes rather than the social environment. An independent samples t-test was conducted to determine whether there were significant differences in the sample's levels of cultural intelligence and cultural sensitivity in the context of variables related to communicating with people abroad and following mass media, and the analysis results are presented in the table below.

Table 9: Independent Samples t-Test Results on Pre-Service Teachers' Cultural Intelligence and Intercultural Sensitivity Levels Based on Their Engagement with Mass Media from the Country of the Target Language

Variable	Group	Mean	t	p
Cultural Intelligence	Media engagement	3.63	2.664	.008*
	No media engagement	3.43		
Intercultural Sensitivity	Media engagement	3.29	-0.338	.912
	No media engagement	3.30		

According to the results of the independent sample t-test, the cultural intelligence levels of individuals who communicate with foreign countries and follow mass media ($\bar{x}$ = 3.63) are significantly higher than those who do not ($\bar{x}$ = 3.43), t(235) = 2.66, p = .008. This finding shows that individuals develop cognitive awareness, motivation, and behavioral adaptation skills more effectively through intercultural communication. Communication with foreign countries and following mass media play a functional role in the development of cultural intelligence. However, no significant difference was found in cultural sensitivity levels, t(235) = –0.34, p = .912. The average of individuals who communicate ($\bar{x}$ = 3.29) is almost the same as that of individuals who do not communicate ($\bar{x}$ = 3.30). This situation shows that cultural sensitivity is shaped not only by communication frequency but also by individual values, empathy level, and social learning. To test whether there is a statistically significant relationship between the cultural intelligence levels and cultural sensitivities of the sample, a Pearson correlation analysis was performed, and the analysis results are presented in the table below.

Table 10: Correlation Between Cultural Intelligence and Intercultural Sensitivity

	Cultural Intelligence	Intercultural Sensitivity
Cultural Intelligence	Pearson Correlation	1
	Sig. (2-tailed)	
	N	243
Intercultural Sensitivity	Pearson Correlation	,421**

	Sig. (2-tailed)	,001
	N	243

Note: Correlation is significant at the 0.01 level (2-tailed).

As a result of the correlation analysis, a positive, moderate, and statistically significant relationship was found between the pre-service teachers' levels of intercultural sensitivity and their levels of cultural intelligence ($r(237) = .421$, $p < .001$). The correlation coefficient of $r = .421$ indicates a positive relationship, suggesting that as cultural intelligence increases, intercultural sensitivity tends to increase as well. According to Cohen (1988), a coefficient of .42 reflects a moderate level of association between the two variables. This finding suggests that both variables exhibit similar tendencies and that changes in one may potentially influence the other. Since the p-value (.001) is smaller than the .01 threshold, this relationship is statistically significant at the 99% confidence level, indicating a very low probability that the observed association occurred by chance. The two-tailed test indicates that the analysis assessed the possibility of both positive and negative relationships. Given the positive and statistically significant result, it is reasonable to infer that as individuals' cultural intelligence increases, so does their intercultural sensitivity. These findings underscore the importance of cultural intelligence as a critical component in the development of intercultural competence among pre-service teachers. In other words, as individuals enhance their ability to understand, interpret, and respond appropriately to different cultures, their levels of intercultural sensitivity are likely to improve. In conclusion, the data reveal a moderate, positive, and statistically significant correlation between cultural intelligence and intercultural sensitivity. This result implies that implementing activities that foster cultural intelligence within the context of intercultural education and foreign language teaching may simultaneously contribute to the development of intercultural sensitivity.

Conclusion

This research adds to the expanding scholarly discourse on the significance of intercultural competence within the context of foreign language teacher preparation. The results demonstrated a moderate yet statistically meaningful positive relationship between pre-service teachers' intercultural sensitivity and their levels of cultural intelligence ($r = .421$, $p < .001$), indicating that greater cultural intelligence may correspond with heightened sensitivity and adaptability to cultural diversity (Chen & Starosta, 2000; Ang et al., 2007). These outcomes are consistent with previous studies suggesting that individuals who possess advanced cultural intelligence are more capable of navigating unfamiliar cultural settings and participating in effective intercultural communication (Earley & Ang, 2003; Thomas, 2005). Given these findings, it is essential for teacher education programs to incorporate culturally responsive pedagogical strategies that actively promote the development of cultural intelligence. Equipping future educators with these competencies not only enhances their intercultural awareness but also supports the creation of inclusive and empathetic learning environments that are vital for global citizenship and sustainable intercultural engagement. The analysis also revealed that female participants reported significantly higher levels of cultural intelligence than male participants. This finding is consistent with previous studies indicating that gender-related differences in empathy, social awareness, and interpersonal orientation may contribute to variations in intercultural competence and cultural intelligence (Ang & Dyne, 2015; Rockstuhl et al., 2011). It has been determined that there is no significant difference in intercultural sensitivity and cultural intelligence levels in experiential variables such as the desire to live in the country whose language they learned or making friends from that country, depending on their situation in that country.

These findings may appear surprising at first glance, as it is often assumed that experiences such as "being in a country where the target language is spoken" would naturally enhance an individual's intercultural sensitivity. However, the lack of a statistically significant difference suggests that physical presence alone is not sufficient; rather, factors such as active participation, the degree of social interaction, and cognitive engagement play a more critical role in the development of intercultural competence (Jackson, 2008; Deardorff, 2006). Contrary to expectations, factors such as prior experiences abroad or passive media engagement did not result in statistically significant differences in either cultural intelligence or intercultural sensitivity. Following the results, it was found that tracking mass media from the country of the target language did not produce a statistically significant difference in participants' overall intercultural sensitivity levels. However, a significant effect was observed in the behavioral dimension of cultural intelligence based on participants' engagement with foreign mass media, while no meaningful differences were identified in the other dimensions. These findings suggest that sustainable development of intercultural competencies may require more than occasional international exposure—it demands intentional pedagogical design, reflective practice, and real-life intercultural interaction opportunities (Byram, 1997; Crowne, 2008; Leung et al., 2014; Deardorff & Arasaratnam-Smith, 2017).

One of the most salient findings of this study is the moderate, positive, and statistically significant correlation ($r = .421$; $p < .001$) between pre-service teachers' levels of intercultural sensitivity and cultural intelligence. This result implies that the two constructs complement each other and can develop in parallel. Intercultural sensitivity appears to be a key component in shaping cultural intelligence, particularly for pre-service teachers who are expected to empathize with individuals from diverse cultural backgrounds, learn their language, and eventually teach it. Teachers with strong empathic abilities are more likely to succeed in adapting to diverse cultural environments and establishing effective communication (Henfling &Franzke, 2017; Chen & Starosta, 1996). Additionally, existing research has supported the claim that increases in cultural intelligence are positively associated with improved task performance (Gorji & Ghareseflo, 2011; Şahin & Gürbüz, 2012). The findings of the current study also reveal that empathy—a core element of intercultural sensitivity—is well-developed among participants. This underscores the role of cultural intelligence in predicting intercultural sensitivity, and confirms the interdependent nature of these constructs in fostering respectful and effective communication across cultures.

Recommendations

The research findings highlight the necessity of fostering competencies such as cultural intelligence and intercultural sensitivity within foreign language teacher education programs. These skills are essential not only for effective language instruction but also for cultivating intercultural understanding and sustaining peaceful communication. Enhanced cultural intelligence promotes more adaptive and constructive behavior toward individuals from other cultures (Berry & Ward, 2006), thereby enabling greater success in managing cultural differences and achieving mutual adaptation. Faculties of Education should enrich their curricula with themes such as cultural interaction, empathy, respect for diversity, and global citizenship. This can be operationalized through experiential learning opportunities such as internships and classroom observations in multicultural or international school settings, international mobility programs, and intercultural workshops. These activities help bridge theoretical knowledge and practice, thereby fostering greater intercultural awareness. Enhancing intercultural sensitivity can be viewed as a strategic step toward the development of cultural intelligence, contributing to the effective management of cultural diversity at both individual and societal levels. Moreover, digital collaborative platforms such as eTwinning, Tandem, or e-Pal can facilitate interaction between students and peers from different cultures, promoting both digital literacy and cultural empathy. Pre-service teachers should also be encouraged to create their own intercultural teaching materials (e.g., reading texts, videos, and learning activities), which would help them transition from passive consumers to active producers of content. Regular reflective writing tasks or journaling practices can be employed to document and monitor their intercultural engagement and development. Lastly, pre-service teachers working in multilingual school environments should be encouraged to develop culturally responsive projects, fostering inclusive and equitable educational practices.

In light of these results, teacher education programs should prioritize the integration of structured intercultural training components aimed at fostering both cultural intelligence and intercultural sensitivity. Doing so not only prepares future educators to thrive in diverse classrooms but also supports the broader goal of cultivating globally competent, socially responsible, and culturally responsive educational environments (OECD, 2018; Deardorff, 2020; UNESCO, 2021). Ultimately, strengthening intercultural competencies is an essential step toward achieving equity, inclusion, and sustainable educational outcomes in an increasingly interconnected world.

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