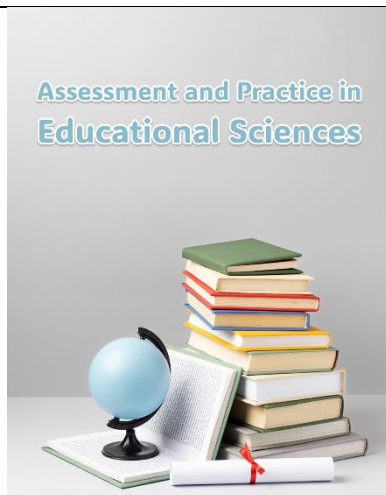




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1. Zahra. Salimi^{ORCID}: Department of Translation Studies, Faculty of English Language, Allameh Tabataba'i University, Tehran, Iran (Email: salimi_z@aol.com)

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Cultural Intelligence, Foreign Language Enjoyment, and Willingness to Communicate: Testing an Integrated Model of L2 Engagement

ABSTRACT

This study aimed to test an integrated model examining the direct effects of cultural intelligence and foreign language enjoyment on willingness to communicate in English and the mediating role of foreign language enjoyment in the relationship between cultural intelligence and willingness to communicate among EFL learners. A cross-sectional correlational design was employed among 412 adult EFL learners enrolled in private English language institutes in Tehran, Iran, during 2026. Participants completed the Cultural Intelligence Scale, the Short Form of the Foreign Language Enjoyment Scale, and the Willingness to Communicate in English Scale. The measurement properties of the instruments were evaluated using confirmatory factor analysis, Cronbach's alpha, composite reliability, and average variance extracted. Pearson correlations were calculated to examine preliminary relationships among the variables. Structural equation modeling with maximum likelihood estimation was then used to test the hypothesized direct and indirect relationships. The significance of the mediating effect was examined using bias-corrected bootstrapping with 5,000 resamples and 95% confidence intervals. The structural model demonstrated satisfactory fit, $\chi^2(334) = 694.21$, $\chi^2/df = 2.08$, CFI = .948, TLI = .941, RMSEA = .051, and SRMR = .049. Cultural intelligence significantly predicted foreign language enjoyment ($\beta = .55$, $p < .001$) and willingness to communicate ($\beta = .30$, $p < .001$). Foreign language enjoyment also significantly predicted willingness to communicate ($\beta = .49$, $p < .001$). The indirect effect of cultural intelligence on willingness to communicate through foreign language enjoyment was significant ($\beta = .27$, 95% CI [.19, .35], $p < .001$), indicating partial mediation. Cultural intelligence explained 30% of the variance in foreign language enjoyment, while cultural intelligence and enjoyment jointly explained 53% of the variance in willingness to communicate. Cultural intelligence appears to enhance L2 communicative engagement both directly and indirectly by fostering greater enjoyment of foreign language learning, highlighting the joint importance of intercultural capability and positive emotion in promoting willingness to communicate.

Keywords: Cultural intelligence; foreign language enjoyment; willingness to communicate; L2 engagement; EFL learners; structural equation modeling

Introduction

Second language (L2) learning is increasingly conceptualized as a complex process in which cognitive, affective, motivational, interpersonal, and sociocultural resources jointly shape learners' engagement with the target language. Within this perspective, successful language learning cannot be adequately explained by linguistic knowledge or instructional exposure

alone, because learners differ substantially in the extent to which they actively participate in classroom interaction, seek opportunities for communication, tolerate uncertainty, and derive positive emotional experiences from language use. One construct that has consequently received sustained attention is willingness to communicate (WTC), commonly understood as a learner's readiness to initiate communication in the L2 when an opportunity arises. WTC is particularly important because communicative engagement provides opportunities for meaningful language production, interactional feedback, negotiation of meaning, and the gradual development of communicative competence. Contemporary research increasingly treats WTC as a dynamic outcome influenced by personal characteristics, classroom conditions, emotions, motivational dispositions, and technology-mediated learning environments rather than as a stable personality characteristic. For example, recent evidence has connected WTC with growth mindset, enjoyment, anxiety, teacher behavior, classroom interaction, speaking self-efficacy, and digital learning experiences (1-3). Similarly, research on learners' future L2 selves suggests that communicative readiness is embedded in broader systems of self-perception, emotion, and personality, with distinct learner profiles demonstrating different patterns of emotional experience and communicative inclination (4). Such findings indicate that explaining why some learners readily communicate whereas others remain reluctant requires integrated models capable of simultaneously incorporating relatively enduring learner capacities and more context-sensitive affective experiences.

Among the affective variables implicated in L2 communication, foreign language enjoyment (FLE) has emerged as one of the central constructs within the positive psychology movement in second language acquisition. FLE refers to the positive emotional experience arising when learners perceive language-learning activities as stimulating, meaningful, socially rewarding, and compatible with their developing competence. Unlike a simple absence of anxiety, enjoyment represents an affirmative psychological state characterized by interest, pleasure, accomplishment, interpersonal connection, and openness to challenge. A growing body of research suggests that FLE can energize sustained engagement, promote persistence, facilitate classroom participation, and encourage learners to take communicative risks. A recent scoping review of FLE research from the perspective of positive psychology demonstrated that enjoyment has become a major explanatory construct in contemporary language-learning research and is associated with a wide range of adaptive academic, motivational, and communicative outcomes (5). Empirical evidence has likewise shown that FLE is multidimensional and may originate from personal experiences of competence, interactions with classmates, instructional activities, and teacher-related factors (6). Positive emotions have also been linked with language-learning achievement through behavioral and psychological engagement, reinforcing the view that emotions contribute to learning partly because they influence whether and how learners participate in instructional activities (7). In a related line of inquiry, self-sustained English learning has been associated with motivational and affective resources that enable learners to maintain active engagement beyond immediate external demands (8). FLE therefore constitutes more than a pleasant by-product of successful language learning; it may operate as an important psychological mechanism through which learner characteristics and contextual affordances are converted into active L2 engagement.

The relationship between FLE and WTC has received especially strong empirical support. Learners experiencing greater enjoyment are generally more willing to participate, speak, interact with peers, and initiate communication in the target language. In Indonesian EFL learners, classroom community, enjoyment, anxiety, and self-confidence jointly predicted willingness to communicate, demonstrating that positive emotional experiences are embedded within broader interpersonal and self-evaluative systems that facilitate communicative participation (9). Evidence from Iranian learners has similarly shown that classroom enjoyment is positively related to WTC and that the strength and configuration of this association may differ across public school and private language institute contexts (10). In online foreign language classrooms, enjoyment has also emerged as a positive predictor of WTC, whereas boredom functions in the opposite direction, emphasizing that communicative

engagement remains strongly emotion-dependent even when interaction occurs digitally rather than in conventional classrooms (11). Studies conducted in blended learning contexts have further demonstrated that enjoyment contributes significantly to explaining WTC alongside dispositional variables such as grit and negative states such as boredom (12). More recent evidence indicates that FLE and burnout jointly predict multilingual learners' willingness to communicate, suggesting that communicative readiness reflects a balance between energizing and depleting affective experiences (13). In a multilingual South Asian context, motivational intensity, enjoyment, and shyness were likewise identified as meaningful predictors of L2 WTC, underscoring the interaction between approach-related and inhibition-related psychological tendencies (14). Collectively, these studies establish FLE as one of the most consistent proximal affective predictors of communicative engagement.

Recent studies have moved beyond identifying simple associations and have increasingly examined FLE as a mediator linking educational, psychological, and interpersonal antecedents to WTC. Teacher support, for instance, has been found to influence L2 WTC indirectly through enjoyment in conjunction with grit, indicating that supportive instructional environments can foster communication by enhancing positive classroom emotion (15). Similarly, perceived teacher clarity has been associated with greater WTC through the mediating role of enjoyment, emphasizing that comprehensible, organized, and predictable instruction can generate positive affect that subsequently encourages communication (16). Classroom interaction has also been shown to predict WTC through the simultaneous operation of speaking self-efficacy and FLE, suggesting that repeated successful interaction may strengthen both learners' competence beliefs and their positive emotional orientation toward speaking (3). From an individual-differences perspective, emotional intelligence has been positively linked with FLE and WTC, with evidence indicating that emotionally competent learners may be better able to regulate classroom experiences in ways that sustain enjoyment and communicative readiness (17). Theoretical work has additionally proposed that emotional intelligence may moderate relationships between enjoyment and language-learning achievement, further highlighting the importance of learners' emotion-related capacities in determining the consequences of positive affect (18). Research on grit similarly suggests that perseverance interacts with enjoyment and anxiety in shaping communicative behavior, while broader studies of grit in second language learning have demonstrated that perseverance itself is associated with multiple individual-difference and background variables (19, 20). These findings point toward a broader theoretical principle: positive emotion can constitute an intervening mechanism through which relatively stable personal characteristics become translated into active L2 engagement.

The expanding use of artificial intelligence and informal digital learning has reinforced the importance of this affective mechanism. AI-mediated and generative-AI-supported language learning environments provide learners with new opportunities for individualized practice, low-risk communication, immediate feedback, and autonomous engagement, but their effectiveness appears to depend substantially on learners' emotional responses. A systematic review of empirical studies on emotions in AI-assisted English learning concluded that positive and negative emotions play central roles in shaping learners' responses to AI-enhanced instruction and practice (21). Research on AI-mediated informal digital learning of English has similarly linked such learning experiences with FLE and the ideal L2 self, demonstrating that technology-mediated engagement can become integrated with learners' positive emotional and motivational systems (22). Studies of generative AI-supported speaking practice further indicate that positive psychology constructs and intrinsic motivation contribute to explaining learners' acceptance and continued use of AI-based speaking technologies (23). Among struggling EFL learners, attitudes toward language learning and generative AI have also been examined through models involving enjoyment and anxiety, illustrating the importance of emotion in determining how learners respond to emerging technologies (24). More directly, generative AI-mediated informal digital learning has been associated with AI literacy, emotions, and WTC, indicating that digital engagement

may influence communicative disposition by reshaping both learners' competence-related perceptions and emotional experiences (25). AI-assisted speaking activities have also been reported to affect foreign language emotions and WTC in learners of Spanish as a foreign language (26), while dimensional analyses suggest that specific components of FLE can mediate the association between AI-assisted informal digital learning and L2 WTC (27). These developments confirm that enjoyment remains a theoretically central mechanism even as the ecology of language learning expands beyond the traditional classroom.

Despite these advances, comparatively less attention has been devoted to cultural intelligence as a potential antecedent of positive L2 emotion and communicative engagement. Cultural intelligence refers broadly to an individual's capability to understand, interpret, adapt to, and function effectively in culturally diverse situations. It encompasses metacognitive processes involving awareness and regulation of cultural assumptions, cognitive knowledge about cultural systems and practices, motivational interest and confidence in intercultural interaction, and behavioral flexibility in adapting verbal and nonverbal conduct. These capacities are inherently relevant to foreign language learning because using an additional language is frequently also an intercultural act. L2 learners are required not only to produce grammatically appropriate utterances but also to interpret perspectives, negotiate culturally embedded meanings, respond to unfamiliar communicative conventions, and manage uncertainty during interaction. Learners with higher cultural intelligence may therefore approach culturally diverse communicative situations with greater curiosity, confidence, flexibility, and tolerance for ambiguity. Research on intercultural sensitivity offers indirect support for this proposition. Among secondary-school EFL learners in Poland and Spain, affective factors and intercultural sensitivity were associated with willingness to communicate orally outside the classroom, suggesting that openness and responsiveness to intercultural difference can contribute to voluntary L2 communication (28). More broadly, studies examining growth mindset, grit, future selves, emotional intelligence, and motivational intensity consistently demonstrate that adaptive learner resources can influence WTC by shaping how communicative opportunities are interpreted and emotionally experienced (1, 14, 17). Cultural intelligence may represent another such resource, but its simultaneous relationships with FLE and WTC remain insufficiently specified.

A theoretical rationale can be advanced for expecting cultural intelligence to predict both enjoyment and WTC. First, culturally intelligent learners may experience intercultural communication as less threatening and more cognitively manageable because they possess strategies for interpreting unfamiliar behavior, monitoring assumptions, and adjusting responses. Such capacities may reduce uncertainty and enable learners to experience communication as rewarding rather than intimidating. Second, motivational cultural intelligence entails intrinsic interest and confidence in engaging across cultures, characteristics that conceptually overlap with the approach-oriented emotional tendencies underlying enjoyment. Learners who actively value cross-cultural interaction may be more likely to derive satisfaction from language-learning activities that expose them to new perspectives, identities, and communicative practices. Third, behavioral cultural intelligence provides flexibility in adapting communicative behavior, which may increase perceived interactional effectiveness and thereby strengthen both enjoyment and willingness to communicate. This reasoning parallels findings showing that growth mindset and grit are positively associated with FLE (29), that emotional and motivational learner profiles are associated with differential WTC (4), and that positive emotions can translate personal resources into engagement and achievement (7). Accordingly, cultural intelligence may not influence WTC solely through a direct capacity for intercultural adaptation; part of its effect may operate through the positive emotional experience generated when learners perceive cross-cultural language use as understandable, manageable, and personally rewarding.

This possibility is especially pertinent in EFL contexts, where learners often have limited opportunities for spontaneous interaction with target-language communities and where classroom communication constitutes a primary setting for developing communicative confidence. In such settings, willingness to communicate can become sensitive to learners' interpretations of

cultural difference and to the emotional climate surrounding language use. Research has shown that positive teacher behavior, classroom interaction, learner self-beliefs, and social-affective conditions can substantially alter communicative readiness (2, 9, 16). At the same time, contemporary research increasingly emphasizes heterogeneity among language learners rather than assuming uniform responses to learning environments. Person-centered evidence concerning emotional intelligence, enjoyment, and WTC indicates that learners may cluster into psychologically distinct profiles with different communicative tendencies (17), while research on future L2 selves similarly demonstrates that different motivational-emotional configurations correspond with different patterns of communication (4). This heterogeneity makes it theoretically useful to investigate learner capacities that could explain why similar classroom environments generate different emotional and behavioral responses. Cultural intelligence is particularly promising because its metacognitive, cognitive, motivational, and behavioral dimensions collectively address how individuals make sense of cultural complexity and regulate themselves within intercultural interaction.

The Iranian EFL context provides a particularly relevant setting for examining these relationships. Iranian learners typically acquire English in an environment where English functions primarily as a foreign rather than societal language, making formal courses, private language institutes, media, digital communication, and technology-mediated learning important sources of L2 exposure. Previous Iranian research has already demonstrated meaningful relationships among grit, classroom enjoyment, and willingness to communicate and has shown that educational context can differentiate learners' affective and communicative experiences (10). Nevertheless, the role of intercultural psychological capacities has received substantially less attention than constructs such as grit, anxiety, enjoyment, self-efficacy, and teacher support. This omission is increasingly consequential because contemporary English use involves communication across diverse cultural and linguistic backgrounds rather than interaction with a single homogeneous target culture. Moreover, developments in AI-assisted and digitally mediated language learning are increasing learners' exposure to globally distributed content and interlocutors, further strengthening the relevance of intercultural adaptability (25, 26). A model integrating cultural intelligence, FLE, and WTC therefore responds to both a theoretical gap and the changing communicative ecology of L2 learning. It also extends the established literature on positive psychology by testing whether enjoyment functions as an affective bridge between a culturally oriented learner capability and communicative engagement, rather than merely serving as an independent predictor of WTC.

Taken together, the existing literature establishes several important propositions while leaving their integration unresolved. FLE consistently predicts willingness to communicate across face-to-face, blended, online, multilingual, and technology-enhanced environments (11-13, 27); enjoyment frequently mediates the influence of instructional or learner-related antecedents on communication (15, 16); and individual capacities such as grit, emotional intelligence, motivational intensity, growth mindset, and culturally relevant sensitivity contribute to affective or communicative outcomes (20, 28, 29). At the same time, recent research demonstrates that positive emotional processes remain influential across rapidly changing forms of L2 engagement, including AI-assisted and generative-AI-mediated learning (21-24). Yet cultural intelligence has rarely been incorporated into an integrated explanatory model alongside FLE and WTC, despite its direct conceptual relevance to the intercultural demands of foreign language communication. Examining these variables simultaneously may therefore provide a more comprehensive account of L2 engagement by linking intercultural capability, positive emotion, and behavioral readiness within a single structural framework. Accordingly, the aim of the present study was to test an integrated model of L2 engagement examining the direct effects of cultural intelligence and foreign language enjoyment on willingness to communicate in English and the mediating role of foreign language enjoyment in the relationship between cultural intelligence and willingness to communicate among EFL learners in Tehran.

Methods and Materials

Design and Participants

This study employed a cross-sectional correlational design and structural equation modeling (SEM) to examine the relationships among cultural intelligence, foreign language enjoyment, and willingness to communicate in English among learners of English as a foreign language (EFL). The hypothesized model was designed to test both the direct relationships of cultural intelligence and foreign language enjoyment with willingness to communicate and the indirect relationship between cultural intelligence and willingness to communicate through foreign language enjoyment. The target population consisted of adult EFL learners enrolled in private English language institutes in Tehran, Iran, during the 2026 academic year. Participants were recruited from eight language institutes located in different geographical areas of Tehran to increase heterogeneity in socioeconomic and educational backgrounds. A multistage convenience sampling procedure was employed in which language institutes were first selected from different districts of Tehran, after which eligible learners attending intermediate, upper-intermediate, and advanced English courses were invited to participate. The final sample consisted of 412 EFL learners. Eligibility criteria included being at least 18 years of age, having studied English as a foreign language for at least one year, currently attending an English language course at the intermediate level or above, and providing informed consent to participate. Learners who submitted questionnaires with substantial missing responses or who did not complete all major study measures were excluded from the final dataset. The selected sample size was considered adequate for structural equation modeling given the number of observed indicators and latent constructs included in the proposed model. Participation was voluntary, and respondents were informed that their responses would remain anonymous and would be used exclusively for research purposes. No personally identifying information was collected. Participants completed the questionnaires in a quiet classroom setting or through a secure electronic survey under standardized instructions. They were informed that there were no correct or incorrect responses and were encouraged to respond according to their actual experiences of learning and communicating in English. The average time required to complete the questionnaire battery was approximately 15–20 minutes.

Instruments and Data Collection

Cultural Intelligence Scale. Cultural intelligence was assessed using the Cultural Intelligence Scale (CQS) developed and validated by Ang et al. (2007). The CQS is a 20-item multidimensional self-report instrument designed to assess an individual's capability to function effectively in culturally diverse situations. The scale comprises four dimensions: metacognitive cultural intelligence, measured by four items; cognitive cultural intelligence, measured by six items; motivational cultural intelligence, measured by five items; and behavioral cultural intelligence, measured by five items. Metacognitive cultural intelligence reflects conscious cultural awareness and the regulation of cognitive processes during intercultural interactions; cognitive cultural intelligence represents knowledge of the norms, practices, conventions, and systems of different cultures; motivational cultural intelligence reflects the interest, confidence, and energy directed toward functioning in culturally diverse environments; and behavioral cultural intelligence concerns the ability to modify verbal and nonverbal behavior appropriately across cultural contexts. Participants respond to the items using a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Scores may be calculated for each dimension as well as for overall cultural intelligence, with higher scores indicating greater cultural intelligence. The original instrument was developed and cross-validated across samples from different national and cultural contexts, and its four-factor structure and satisfactory reliability and validity have been supported in subsequent research. In the present study, the overall cultural intelligence construct and its four dimensions were incorporated into the

measurement model, and internal consistency reliability and construct validity were reassessed using Cronbach's alpha, composite reliability, and confirmatory factor analysis.

Short Form of the Foreign Language Enjoyment Scale. Foreign language enjoyment was measured using the Short Form of the Foreign Language Enjoyment Scale (S-FLES) developed by Botes, Dewaele, and Greiff (2021). The instrument was derived from the broader conceptualization of foreign language enjoyment originally introduced in research on positive emotions in foreign language learning and was designed to provide a psychometrically efficient measure suitable for multivariate studies. The S-FLES consists of nine items organized into three interrelated dimensions: personal enjoyment, social enjoyment, and teacher appreciation, with three items representing each dimension. Personal enjoyment reflects learners' internal sense of accomplishment, interest, and positive emotional experience while learning the foreign language; social enjoyment captures positive emotions arising from interactions with classmates and the social environment of the language classroom; and teacher appreciation represents enjoyment associated with the teacher's support, encouragement, instructional behavior, and contribution to a positive classroom atmosphere. The short form was developed and validated using data from 1,603 foreign language learners, and validation analyses supported a hierarchical three-factor structure in which the three lower-order dimensions represented an overarching foreign language enjoyment construct. Evidence for internal consistency, convergent validity, discriminant validity, and satisfactory model fit was also reported in the scale-development study. Responses in the present study were obtained using a 5-point Likert-type format ranging from 1 (strongly disagree) to 5 (strongly agree), with higher mean scores representing greater enjoyment of the English-language learning experience. Foreign language enjoyment was modeled as a latent construct in the subsequent structural analyses.

Willingness to Communicate in English Scale. Willingness to communicate in the second language was assessed using the Willingness to Communicate in English Scale associated with the classroom model developed by Peng and Woodrow (2010). The measure assesses learners' readiness to initiate or participate in English communication when opportunities for interaction arise in the language classroom. The instrument contains 10 items describing common classroom communication situations, including engaging in role-play activities, providing oral information to classmates, asking questions in English, responding to peers, giving a brief oral presentation or self-introduction, and using English during group activities. The items capture learners' behavioral intention to use English rather than their objective linguistic competence, thereby reflecting the immediate psychological readiness to engage in L2 communication. Participants indicate their willingness on a 5-point Likert-type scale ranging from 1 (definitely not willing) to 5 (definitely willing). Higher scores represent greater willingness to initiate or sustain communication in English. The measure was originally applied within an EFL classroom model tested through structural equation modeling, and subsequent research has demonstrated satisfactory internal consistency and factorial validity for its use with EFL learners. In the current study, willingness to communicate was specified as the principal endogenous variable in the hypothesized structural model.

Prior to the main data collection, the questionnaire battery was reviewed for linguistic clarity and cultural appropriateness. Because participants were EFL learners and some of the original instruments were developed in English, the questionnaires were translated into Persian using a translation and back-translation procedure. First, two bilingual specialists in applied linguistics independently translated the instruments from English into Persian. The translations were compared and reconciled to produce a preliminary Persian version. A second bilingual specialist who had not seen the original instruments subsequently translated the Persian version back into English. The back-translated and original versions were compared, and discrepancies were resolved through discussion among the translators and researchers. The resulting questionnaire was pilot-tested with 30 EFL learners who were not included in the main sample to evaluate comprehensibility, wording, and completion time. Minor linguistic modifications were made where necessary without altering the conceptual content of the original items.

Data Analysis

Data analysis was conducted using IBM SPSS and AMOS. Before testing the hypothesized structural model, the dataset was screened for accuracy, missing values, univariate and multivariate outliers, and violations of the assumptions required for multivariate analysis. Descriptive statistics, including means, standard deviations, minimum and maximum values, skewness, and kurtosis, were calculated for the principal study variables. The normality of the observed variables was evaluated using skewness and kurtosis coefficients, while multivariate outliers were examined using Mahalanobis distance. Pearson correlation coefficients were calculated to determine the preliminary bivariate relationships among cultural intelligence, foreign language enjoyment, and willingness to communicate. Internal consistency reliability was evaluated using Cronbach's alpha and composite reliability, with coefficients of .70 or higher considered acceptable. The adequacy of the measurement model was subsequently assessed through confirmatory factor analysis. Convergent validity was examined using standardized factor loadings and average variance extracted (AVE), with AVE values of .50 or higher indicating adequate convergence. Discriminant validity was evaluated by examining the distinctiveness of the latent constructs and their intercorrelations.

Structural equation modeling with maximum likelihood estimation was used to test the proposed integrated model. The structural model specified cultural intelligence as an exogenous latent construct, foreign language enjoyment as an endogenous mediating construct, and willingness to communicate in English as the principal outcome construct. Direct paths from cultural intelligence to foreign language enjoyment, from cultural intelligence to willingness to communicate, and from foreign language enjoyment to willingness to communicate were estimated simultaneously. The indirect effect of cultural intelligence on willingness to communicate through foreign language enjoyment was also examined to determine whether positive emotional experience in the foreign language classroom served as a mechanism linking intercultural capability with communicative engagement. Model adequacy was evaluated using multiple goodness-of-fit indices, including the chi-square to degrees-of-freedom ratio (χ^2/df), comparative fit index (CFI), Tucker–Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). Values of χ^2/df below 3.00, CFI and TLI values of .90 or greater, and RMSEA and SRMR values below .08 were considered indicative of acceptable model fit. Standardized path coefficients (β), standard errors, critical ratios, and associated p values were reported for the hypothesized direct relationships. The statistical significance of the indirect effect was assessed using bias-corrected bootstrapping with 5,000 resamples and 95% confidence intervals; an indirect effect was considered statistically significant when its confidence interval did not include zero. All statistical tests were two-tailed, and a significance level of $p < .05$ was adopted.

Findings and Results

The final analytical sample consisted of 412 EFL learners studying at private language institutes in Tehran. Of the participants, 238 (57.8%) were female and 174 (42.2%) were male. Participants ranged in age from 18 to 39 years, with a mean age of 24.86 years ($SD = 5.21$). With regard to educational status, 96 participants (23.3%) held or were studying toward an associate degree or diploma-level qualification, 207 (50.2%) were undergraduate students or held a bachelor's degree, and 109 (26.5%) were postgraduate students or graduates. Regarding English proficiency level, 148 participants (35.9%) were enrolled at the intermediate level, 161 (39.1%) at the upper-intermediate level, and 103 (25.0%) at the advanced level. The participants had studied English for an average of 5.74 years ($SD = 2.83$), with the duration of previous English study ranging from 1.5 to 15 years. Approximately 61.4% of the learners reported attending English classes for three or more hours per week, whereas the remainder attended for fewer than three hours weekly. Preliminary examination of the dataset indicated no substantial pattern of missing data, and cases with incomplete responses exceeding the predetermined threshold had been removed before

the final analysis. Inspection of standardized scores and Mahalanobis distance did not identify influential multivariate outliers requiring exclusion. The absolute values of skewness ranged from 0.08 to 0.74 and those of kurtosis ranged from 0.11 to 0.93 across the principal study variables, supporting the adequacy of the distributions for maximum likelihood estimation.

Table 1. Descriptive Statistics, Internal Consistency, and Distributional Characteristics of the Study Variables

Variable	Possible Range	Mean	SD	Min	Max	Skewness	Kurtosis	Cronbach's α
Metacognitive Cultural Intelligence	1–7	5.02	0.91	2.00	7.00	-0.42	0.31	.84
Cognitive Cultural Intelligence	1–7	4.63	0.88	1.83	6.83	-0.28	0.18	.87
Motivational Cultural Intelligence	1–7	5.18	0.96	1.80	7.00	-0.51	0.47	.90
Behavioral Cultural Intelligence	1–7	4.89	0.92	1.80	7.00	-0.35	0.23	.86
Overall Cultural Intelligence	1–7	4.91	0.78	2.25	6.85	-0.39	0.36	.93
Personal Foreign Language Enjoyment	1–5	3.87	0.69	1.67	5.00	-0.46	0.29	.85
Social Foreign Language Enjoyment	1–5	3.72	0.73	1.33	5.00	-0.31	0.14	.82
Teacher Appreciation	1–5	4.01	0.71	1.67	5.00	-0.57	0.52	.88
Overall Foreign Language Enjoyment	1–5	3.87	0.61	1.89	4.89	-0.49	0.43	.91
Willingness to Communicate in English	1–5	3.64	0.72	1.40	5.00	-0.26	0.11	.92

As shown in Table 1, the participants generally reported moderate-to-high levels of the principal study constructs. The mean score for overall cultural intelligence was 4.91 (SD = 0.78) on a 7-point scale, indicating that the participants perceived themselves as relatively capable of understanding and adapting to culturally diverse communicative situations. Among the four dimensions of cultural intelligence, motivational cultural intelligence had the highest mean score (M = 5.18, SD = 0.96), followed by metacognitive cultural intelligence (M = 5.02, SD = 0.91), behavioral cultural intelligence (M = 4.89, SD = 0.92), and cognitive cultural intelligence (M = 4.63, SD = 0.88). This pattern suggests that participants were particularly strong in their interest, confidence, and persistence in intercultural situations, whereas their explicit knowledge of cultural systems, norms, and practices was comparatively less pronounced. Overall foreign language enjoyment also showed a relatively high mean of 3.87 (SD = 0.61) on the 5-point scale. Teacher appreciation yielded the highest mean among the enjoyment dimensions (M = 4.01, SD = 0.71), followed by personal enjoyment (M = 3.87, SD = 0.69) and social enjoyment (M = 3.72, SD = 0.73). The mean willingness to communicate score was 3.64 (SD = 0.72), suggesting that participants were generally inclined to initiate or participate in English communication, although considerable individual variability remained. All Cronbach's alpha coefficients ranged from .82 to .93, exceeding the conventional .70 criterion and indicating satisfactory to excellent internal consistency. Furthermore, the relatively small absolute skewness and kurtosis coefficients provided additional support for approximate univariate normality and justified the use of maximum likelihood estimation in the subsequent confirmatory factor and structural equation analyses.

Table 2. Pearson Correlations Among Cultural Intelligence, Foreign Language Enjoyment, and Willingness to Communicate

Variable	1	2	3	4	5	6	7
1. Metacognitive Cultural Intelligence	1						
2. Cognitive Cultural Intelligence	.58***	1					
3. Motivational Cultural Intelligence	.62***	.54***	1				
4. Behavioral Cultural Intelligence	.59***	.57***	.65***	1			
5. Overall Cultural Intelligence	.82***	.79***	.86***	.84***	1		
6. Foreign Language Enjoyment	.41***	.36***	.52***	.45***	.54***	1	
7. Willingness to Communicate	.38***	.33***	.55***	.47***	.56***	.64***	1

Table 2 presents the zero-order correlations among the principal variables. All dimensions of cultural intelligence were positively and significantly associated with foreign language enjoyment and willingness to communicate. Overall cultural intelligence had a moderate-to-strong positive correlation with foreign language enjoyment ($r = .54$, $p < .001$) and willingness

to communicate ($r = .56, p < .001$), indicating that learners who perceived themselves as more capable of understanding, interpreting, and adapting to culturally diverse situations also tended to experience greater enjoyment in learning English and a stronger readiness to communicate in the target language. Among the cultural intelligence dimensions, motivational cultural intelligence demonstrated the strongest relationship with both foreign language enjoyment ($r = .52, p < .001$) and willingness to communicate ($r = .55, p < .001$), suggesting that learners' motivational resources for engaging with cultural difference were especially relevant to their positive emotional experiences and communicative engagement. Behavioral cultural intelligence was also moderately associated with willingness to communicate ($r = .47, p < .001$), whereas metacognitive and cognitive cultural intelligence demonstrated somewhat smaller but still statistically significant correlations. The strongest bivariate association among the focal study variables was observed between foreign language enjoyment and willingness to communicate ($r = .64, p < .001$), indicating that learners who experienced greater pleasure, interest, and positive affect in English-learning contexts were substantially more willing to initiate communication in English. Although the correlations among the dimensions of cultural intelligence were significant, none approached a level suggesting problematic multicollinearity, and the observed pattern therefore supported the conceptual distinctiveness of the constructs prior to structural model estimation.

Table 3. Confirmatory Factor Analysis, Reliability, and Convergent Validity of the Measurement Model

Construct	Standardized Loading Range	Composite Reliability (CR)	Average Variance Extracted (AVE)
Metacognitive Cultural Intelligence	.68–.84	.86	.61
Cognitive Cultural Intelligence	.64–.82	.88	.55
Motivational Cultural Intelligence	.72–.88	.91	.67
Behavioral Cultural Intelligence	.67–.85	.87	.58
Cultural Intelligence	.75–.90	.93	.76
Personal Foreign Language Enjoyment	.73–.87	.86	.67
Social Foreign Language Enjoyment	.69–.83	.83	.62
Teacher Appreciation	.76–.89	.88	.71
Foreign Language Enjoyment	.80–.92	.91	.77
Willingness to Communicate	.66–.86	.93	.58

Model fit: $\chi^2 = 672.48$, $df = 329$, $\chi^2/df = 2.04$, CFI = .951, TLI = .944, RMSEA = .050, 90% CI [.045, .055], SRMR = .046.

The confirmatory factor analysis demonstrated that the proposed measurement model provided an acceptable-to-good representation of the observed data. The chi-square statistic was significant, $\chi^2(329) = 672.48, p < .001$, as commonly occurs in models estimated with moderate or large samples; however, the normed chi-square value was 2.04, which was below the recommended threshold of 3.00. The comparative fit index (CFI = .951) and Tucker–Lewis index (TLI = .944) exceeded .90 and approached or exceeded the more stringent .95 criterion, while the RMSEA was .050 with a 90% confidence interval from .045 to .055 and the SRMR was .046. Collectively, these indices indicated a satisfactory fit between the hypothesized measurement structure and the empirical covariance matrix. Standardized factor loadings were statistically significant at $p < .001$ and ranged from .64 to .92 across the measurement model, indicating that all retained indicators contributed meaningfully to their respective latent constructs. Composite reliability values ranged from .83 to .93, exceeding the recommended minimum value of .70, whereas average variance extracted values ranged from .55 to .77, surpassing the .50 threshold for adequate convergent validity. The overall cultural intelligence construct was particularly well represented by its four dimensions, with standardized higher-order loadings ranging from .75 to .90, and the higher-order foreign language enjoyment construct was similarly well represented by personal enjoyment, social enjoyment, and teacher appreciation, with loadings ranging from .80 to .92. Taken together, these findings provided evidence that the measurement model exhibited satisfactory reliability and convergent validity and therefore supported proceeding to estimation of the hypothesized structural relationships.

Table 4. Structural Model Paths Predicting Foreign Language Enjoyment and Willingness to Communicate

Hypothesized Path	Standardized β	SE	CR	p	Result
Cultural Intelligence $\rightarrow$ Foreign Language Enjoyment	.55	.052	9.84	< .001	Supported
Cultural Intelligence $\rightarrow$ Willingness to Communicate	.30	.049	5.91	< .001	Supported
Foreign Language Enjoyment $\rightarrow$ Willingness to Communicate	.49	.056	8.73	< .001	Supported

As reported in Table 4, the structural model exhibited satisfactory overall fit, with $\chi^2(334) = 694.21$, $p < .001$, $\chi^2/df = 2.08$, CFI = .948, TLI = .941, RMSEA = .051, and SRMR = .049. All three hypothesized direct paths were positive and statistically significant. Cultural intelligence had a significant positive effect on foreign language enjoyment ($\beta = .55$, SE = .052, CR = 9.84, $p < .001$), indicating that higher levels of intercultural awareness, knowledge, motivation, and behavioral adaptability were associated with stronger positive emotional experiences in English-learning environments. Cultural intelligence also exerted a significant direct effect on willingness to communicate ($\beta = .30$, SE = .049, CR = 5.91, $p < .001$), demonstrating that learners with higher cultural intelligence were more willing to initiate and sustain communication in English even after foreign language enjoyment was statistically controlled. Foreign language enjoyment emerged as the strongest proximal predictor of willingness to communicate ($\beta = .49$, SE = .056, CR = 8.73, $p < .001$), indicating that positive emotional experiences in the foreign language classroom substantially increased learners' readiness to engage in L2 interaction. The model accounted for 30% of the variance in foreign language enjoyment and 53% of the variance in willingness to communicate. Thus, the model demonstrated substantial explanatory power for communicative engagement and suggested that willingness to communicate was jointly influenced by learners' intercultural capabilities and their positive affective experiences during language learning.

Table 5. Bootstrapped Direct, Indirect, and Total Effects of Cultural Intelligence on Willingness to Communicate

Effect	Standardized Effect	Boot SE	95% Lower CI	95% Upper CI	p
Cultural Intelligence $\rightarrow$ Foreign Language Enjoyment	.55	.051	.45	.65	< .001
Foreign Language Enjoyment $\rightarrow$ Willingness to Communicate	.49	.054	.38	.59	< .001
Cultural Intelligence $\rightarrow$ Willingness to Communicate, direct effect	.30	.050	.20	.40	< .001
Cultural Intelligence $\rightarrow$ Foreign Language Enjoyment $\rightarrow$ Willingness to Communicate, indirect effect	.27	.041	.19	.35	< .001
Cultural Intelligence $\rightarrow$ Willingness to Communicate, total effect	.57	.046	.48	.66	< .001

The mediation analysis presented in Table 5 further clarified the mechanism through which cultural intelligence was associated with willingness to communicate. The standardized indirect effect of cultural intelligence on willingness to communicate through foreign language enjoyment was .27, and the bias-corrected 95% bootstrap confidence interval ranged from .19 to .35. Because this interval did not contain zero, the indirect effect was statistically significant at $p < .001$. At the same time, the direct effect of cultural intelligence on willingness to communicate remained significant after foreign language enjoyment was entered into the model ($\beta = .30$, 95% CI [.20, .40], $p < .001$), demonstrating partial rather than full mediation. The total standardized effect of cultural intelligence on willingness to communicate was .57, indicating a comparatively strong overall relationship. Approximately 47% of the total effect of cultural intelligence on willingness to communicate was transmitted indirectly through foreign language enjoyment, calculated as the ratio of the indirect effect (.27) to the total effect (.57). This finding suggests that cultural intelligence enhances willingness to communicate through two complementary mechanisms. First, learners with stronger cultural intelligence appear to possess greater confidence and adaptive capability in intercultural communicative situations, thereby increasing their readiness to engage directly in English communication. Second, cultural intelligence appears to promote more positive emotional experiences during language learning, which in turn further

strengthens learners' willingness to communicate. Accordingly, foreign language enjoyment functioned as a statistically meaningful affective mechanism linking intercultural competence with L2 communicative engagement.

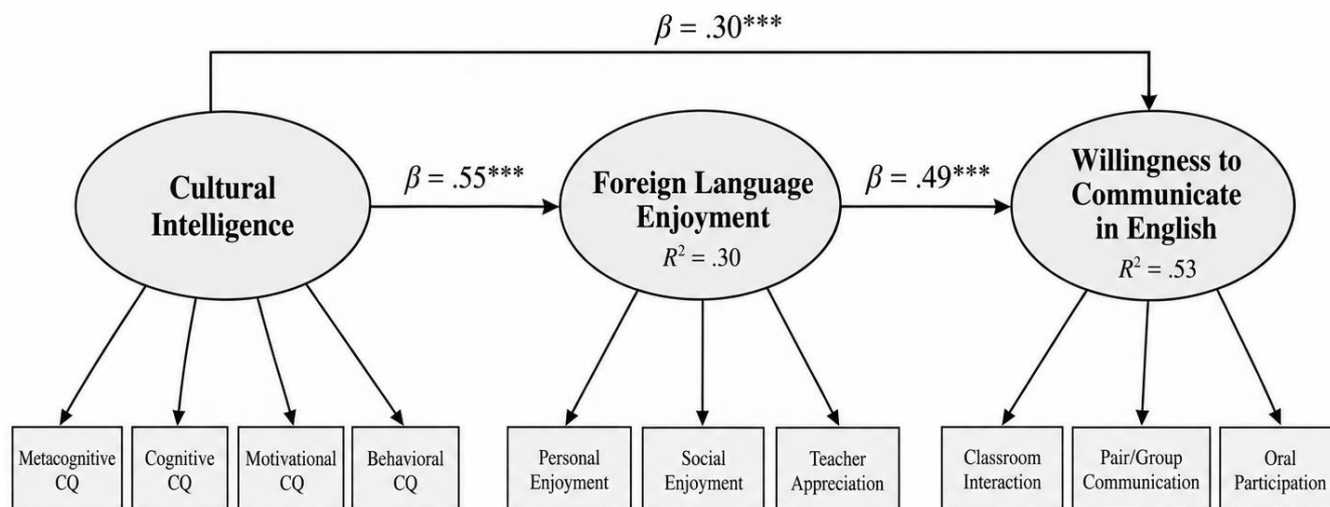


Figure 1. Structural Equation Model of the Relationships Among Cultural Intelligence, Foreign Language Enjoyment, and Willingness to Communicate in English

The structural pattern represented in Figure 1 confirms the integrated nature of the proposed L2 engagement model. Cultural intelligence was positively associated with foreign language enjoyment ($\beta = .55$, $p < .001$) and directly predicted willingness to communicate ($\beta = .30$, $p < .001$), while foreign language enjoyment demonstrated a substantial positive effect on willingness to communicate ($\beta = .49$, $p < .001$). The explained variance estimates further showed that cultural intelligence accounted for 30% of the variance in foreign language enjoyment, whereas cultural intelligence and foreign language enjoyment together explained 53% of the variance in willingness to communicate. The figure therefore illustrates that learners' willingness to engage in English communication is not solely a function of intercultural capability or positive classroom emotion considered independently. Rather, the results support an integrated process in which culturally intelligent learners are more likely to experience English learning as enjoyable and psychologically rewarding, and this enhanced positive emotional state increases their inclination to communicate. The persistence of the significant direct cultural intelligence-to-willingness-to-communicate pathway additionally indicates that cultural intelligence contributes unique explanatory variance beyond the mediating role of enjoyment. Overall, the findings support the proposed integrated model and demonstrate that cognitive, motivational, behavioral, and affective resources operate jointly in shaping L2 communicative engagement among EFL learners in Tehran.

Discussion and Conclusion

The present study tested an integrated model of L2 engagement in which cultural intelligence was conceptualized as an intercultural psychological resource, foreign language enjoyment as a positive affective mechanism, and willingness to communicate in English as the principal behavioral-intentional outcome. The findings supported the proposed model in several important respects. First, cultural intelligence had a strong and statistically significant positive effect on foreign language enjoyment ($\beta = .55$, $p < .001$), accounting for a substantial proportion of variance in learners' positive emotional experiences. Second, cultural intelligence directly predicted willingness to communicate in English ($\beta = .30$, $p < .001$), indicating that learners who were more capable of understanding, interpreting, and adapting to culturally diverse situations were more inclined to initiate or participate in English communication. Third, foreign language enjoyment had a substantial positive effect on

willingness to communicate ($\beta = .49, p < .001$) and emerged as the strongest proximal predictor of communicative readiness in the structural model. Finally, foreign language enjoyment significantly mediated the relationship between cultural intelligence and willingness to communicate, with an indirect standardized effect of .27. Because the direct path from cultural intelligence to willingness to communicate remained significant after enjoyment was incorporated into the model, the mediation was partial rather than complete. Overall, cultural intelligence explained 30% of the variance in foreign language enjoyment, while cultural intelligence and enjoyment jointly explained 53% of the variance in willingness to communicate. These findings suggest that L2 engagement is jointly shaped by learners' capacity to navigate cultural complexity and by the positive affective experiences generated during language learning.

The positive relationship between cultural intelligence and foreign language enjoyment is theoretically meaningful because language learning is not merely a linguistic undertaking but also a form of intercultural engagement. Learners with higher cultural intelligence are likely to approach culturally unfamiliar content, interactional conventions, and communicative ambiguity with greater cognitive flexibility and less uncertainty. Such learners may be more capable of interpreting cultural cues, adjusting expectations, monitoring their own assumptions, and modifying their behavior during intercultural communication, thereby increasing the likelihood that language-learning activities are experienced as stimulating rather than threatening. Although direct research combining cultural intelligence and FLE remains limited, the present finding is consistent with broader evidence showing that adaptive psychological resources are positively associated with enjoyment. For example, growth mindset and grit have been linked to greater FLE, indicating that learners who perceive challenges as manageable and worthwhile tend to report more positive emotional experiences in language learning (29). Similarly, emotional intelligence has been associated with higher enjoyment, suggesting that learners who can recognize and regulate emotion may be better positioned to derive positive affect from the language classroom (17). The present findings extend this logic by showing that intercultural competence-related capacities may serve a similar function, helping learners interpret culturally complex language-learning experiences in a more adaptive and rewarding manner.

The direct effect of cultural intelligence on willingness to communicate also supports the view that intercultural competence can influence communicative behavior independently of momentary emotional experience. Learners with greater metacognitive, cognitive, motivational, and behavioral cultural intelligence may possess a broader repertoire for managing communication with people whose linguistic and cultural backgrounds differ from their own. They may therefore experience fewer uncertainties about culturally appropriate interaction and show greater confidence in adapting their speech, nonverbal behavior, and interactional strategies. This interpretation is consistent with evidence that intercultural sensitivity is associated with oral willingness to communicate outside the classroom, suggesting that openness to cultural difference can facilitate voluntary communication in the target language (28). The result also aligns with research showing that WTC is influenced by a variety of relatively enduring learner characteristics, including motivational intensity, grit, personality-related tendencies, growth mindset, and future L2 self-conceptions (1, 4, 14, 20). Cultural intelligence appears to add an explicitly intercultural dimension to this body of work. Whereas constructs such as grit explain persistence and growth mindset explains beliefs about change and development, cultural intelligence may explain whether learners perceive culturally diverse communication as intelligible, manageable, and worth approaching.

Foreign language enjoyment was also found to exert a substantial direct effect on willingness to communicate, which is highly consistent with previous research. Learners who experienced greater enjoyment were more willing to speak, participate, respond, and engage in English interaction. This result supports positive psychology perspectives in second language acquisition, according to which positive emotion does more than simply counteract anxiety; it can broaden attention, encourage exploration, increase openness to challenge, and promote active engagement. The finding is consistent with research showing

that classroom enjoyment significantly predicts WTC among EFL learners and operates alongside variables such as classroom community, anxiety, and self-confidence (9). It also agrees with evidence from Iranian learners demonstrating a positive association between classroom enjoyment and willingness to communicate across different educational settings (10). In online foreign language learning, greater enjoyment has likewise been associated with stronger WTC, whereas boredom predicts withdrawal and reduced communicative engagement (11). Similar patterns have been observed in blended learning environments, where enjoyment contributes positively to willingness to communicate alongside grit and boredom (12). The consistency of these findings across face-to-face, online, blended, and multilingual environments suggests that enjoyment represents a robust affective driver of L2 communication.

The strength of the enjoyment–WTC relationship in the present study is also compatible with more recent evidence emphasizing the centrality of positive emotion in communicative engagement. Multilingual learners with greater foreign language enjoyment have been found to show higher willingness to communicate, while burnout operates as an opposing affective force (13). Motivational intensity and enjoyment have similarly emerged as positive predictors of WTC in multilingual contexts, with shyness functioning as an inhibitory factor (14). Teacher-related factors may also influence WTC through their effects on enjoyment. Perceived teacher clarity has been shown to predict WTC indirectly through FLE, indicating that instructional organization and comprehensibility may facilitate communication partly because they make the learning experience more enjoyable (16). Teacher support has likewise been linked with L2 WTC through the mediating role of enjoyment, alongside learner characteristics such as grit (15). These studies reinforce the current interpretation that positive emotional experience is not merely correlated with communication but may serve as one of the mechanisms through which instructional and personal resources are transformed into active communicative behavior.

The mediation analysis provides one of the most important contributions of the present study. Foreign language enjoyment significantly mediated the effect of cultural intelligence on willingness to communicate, with almost half of the total effect of cultural intelligence being transmitted through enjoyment. This suggests that culturally intelligent learners are not more willing to communicate solely because they possess better intercultural knowledge or adaptive behavioral skills. Rather, part of their increased communicative readiness appears to arise because their cultural capabilities make L2 learning and interaction more enjoyable. A culturally intelligent learner may be better equipped to understand unfamiliar perspectives, tolerate ambiguity, and respond flexibly to social differences; these capabilities may reduce the psychological friction associated with intercultural communication and allow the learner to experience curiosity, achievement, and interpersonal connection. These positive experiences then increase the desire to communicate. The mediation finding is consistent with research demonstrating that FLE can act as an explanatory mechanism between learner or contextual antecedents and WTC. Classroom interaction, for example, has been reported to influence willingness to communicate through speaking self-efficacy and enjoyment (3), while teacher clarity and teacher support have been shown to operate partly through enjoyment (15, 16). The present study extends this mediation framework from instructional variables to an intercultural individual-difference construct.

The partial rather than complete mediation is equally noteworthy. Even after foreign language enjoyment was statistically controlled, cultural intelligence continued to exert a significant direct effect on willingness to communicate. This indicates that enjoyment explains only part of the mechanism linking cultural intelligence with communicative engagement. Cultural intelligence may also influence WTC through pathways involving intercultural self-efficacy, reduced uncertainty, greater perceived communicative competence, more positive attitudes toward intercultural interaction, or increased motivation to seek contact with culturally different interlocutors. This interpretation parallels evidence that WTC is multiply determined. Studies have identified speaking self-efficacy, teacher behavior, classroom interaction, enjoyment, anxiety, motivational intensity, and personality-related factors as simultaneous contributors to communicative behavior (2, 3, 14). Research on learner profiles

further indicates that combinations of emotion, personality, and future self-representations generate different patterns of communicative readiness (4). The present findings therefore support a multidimensional conception of WTC in which cultural intelligence contributes both affectively, through enjoyment, and through other direct cognitive-motivational or behavioral channels.

The results also correspond with research on the broader role of emotions in language-learning engagement and achievement. Positive and negative emotions have been shown to influence academic outcomes partly through engagement, suggesting that affect shapes learning behavior by affecting how much effort, attention, and participation learners invest in language activities (7). Self-sustained learning has similarly been associated with motivational and psychological resources that enable learners to remain engaged over time (8). From this perspective, willingness to communicate can be regarded as one specific behavioral expression of broader L2 engagement. Enjoyment may increase the probability that learners actively seek opportunities to use English, remain involved during communicative tasks, and persist even when communication is imperfect. The current model therefore links positive emotion not only to subjective well-being in the language classroom but to a concrete behavioral intention that is directly relevant to language practice and development.

The findings are also timely in light of the rapid expansion of AI-assisted and digitally mediated language learning. Recent research has shown that enjoyment remains an important mechanism in technology-rich learning environments. AI-mediated informal digital learning has been associated with FLE and ideal L2 self-development (22), while generative AI-supported language practice has been examined through positive psychology and intrinsic motivation perspectives (23). Learner attitudes toward generative AI have likewise been linked with enjoyment and anxiety, especially among struggling EFL learners (24). More directly, GenAI-mediated informal learning has been associated with emotions and willingness to communicate (25), and AI-assisted speaking has been shown to influence foreign language emotions and WTC (26). Recent evidence has further suggested that specific dimensions of FLE can mediate the relationship between AI-assisted informal digital learning and willingness to communicate (27). A systematic review of emotions in AI-assisted English learning similarly emphasized the central role of affect in determining how learners experience and benefit from technology-enhanced language learning (21). These studies suggest that the interplay identified in the present research may become increasingly important as learners encounter culturally diverse content, conversational agents, and global communicative opportunities through digital environments.

The explanatory power of the model also deserves attention. Cultural intelligence accounted for 30% of the variance in foreign language enjoyment, while cultural intelligence and FLE together explained 53% of the variance in willingness to communicate. Explaining more than half of the variance in WTC indicates that the integrated model captures substantial aspects of learners' communicative readiness while still leaving room for additional determinants. This is consistent with the established complexity of WTC, which is influenced by learner characteristics, emotional states, instructional practices, peer relationships, perceived competence, and immediate situational factors. Research has demonstrated, for example, that emotional intelligence is related to both enjoyment and WTC (17), that enjoyment and anxiety contribute to the relationship between grit and WTC (19), and that enjoyment can coexist with other motivational and affective processes in shaping learning outcomes (18). Likewise, FLE itself is multidimensional and can arise from personal, social, and teacher-related sources (5, 6). Thus, the current model should be understood as a parsimonious but meaningful explanation of L2 engagement rather than an exhaustive account. Its primary contribution lies in demonstrating that intercultural capability and positive affect operate together in shaping learners' readiness to use the target language.

One limitation of the present study concerns its cross-sectional correlational design, which does not permit definitive causal inference. Although the structural model was theoretically specified with cultural intelligence as an antecedent of foreign

language enjoyment and willingness to communicate, reciprocal relationships are possible. Learners who communicate more frequently may develop stronger intercultural competence and may also experience greater enjoyment as a consequence of successful interaction. The use of self-report questionnaires may additionally have introduced common-method variance, social desirability bias, and discrepancies between reported willingness and actual communicative behavior. The sample was drawn from adult EFL learners attending private language institutes in Tehran, which may limit generalizability to learners in public schools, universities, other Iranian regions, younger age groups, or contexts in which English is used as a second rather than foreign language. Furthermore, although the proposed model explained a substantial proportion of WTC variance, potentially important variables such as foreign language anxiety, perceived communicative competence, speaking self-efficacy, personality, teacher support, peer climate, and proficiency were not incorporated into the structural model.

Future research should test the proposed relationships longitudinally and experimentally to determine whether changes in cultural intelligence precede changes in enjoyment and communicative engagement over time. Longitudinal cross-lagged models could clarify the directionality of relationships among the three constructs, while intervention studies could examine whether explicit intercultural training increases FLE and subsequent willingness to communicate. Future studies should also incorporate behavioral indicators, such as frequency and duration of classroom speaking, voluntary turn-taking, peer interaction, recorded oral participation, or digital communication behavior, alongside self-report measures. Multilevel designs could distinguish learner-level effects from teacher- and classroom-level influences, and person-centered approaches such as latent profile analysis could identify distinct combinations of cultural intelligence, enjoyment, and WTC. Comparative research across educational systems, proficiency levels, age groups, and cultural contexts would help determine the generalizability of the model. Additional mediators and moderators, including foreign language anxiety, speaking self-efficacy, intercultural sensitivity, perceived communicative competence, AI literacy, teacher support, and personality characteristics, should also be examined to develop a more comprehensive account of the processes connecting intercultural resources with L2 engagement.

From a practical perspective, language programs should treat cultural intelligence and foreign language enjoyment as instructional resources that can be deliberately cultivated rather than as fixed learner characteristics. Teachers can integrate intercultural problem-solving activities, culturally diverse texts, perspective-taking exercises, simulations, collaborative tasks, and authentic communicative scenarios that require learners to interpret and adapt to different cultural perspectives. Classroom environments should also be structured to maximize enjoyment by providing achievable challenges, meaningful interaction, supportive feedback, learner choice, psychologically safe opportunities for experimentation, and a reduced fear of making linguistic errors. Because enjoyment emerged as a strong predictor and partial mediator of WTC, teachers should pay attention not only to what learners know but also to how communicative tasks are emotionally experienced. Pair and group work, international virtual exchanges, guided use of AI-supported speaking tools, and culturally diverse discussion activities may be particularly useful when implemented in ways that maintain autonomy, curiosity, and interpersonal support. Teacher education programs should therefore prepare instructors to foster both intercultural adaptability and positive classroom emotion so that learners are more willing to transform their linguistic knowledge into actual communication.

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Authors' Contributions

All authors equally contributed to this study.

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The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adhered in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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