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Andi Anugrah Surya Ardhy,  
Yogyakarta State University, Indonesia

## \*CORRESPONDENCE

Assiya Serikbayeva  
✉ assiyaserikbayeva237@gmail.com  
Diana Akizhanova  
✉ diana.akizhanova@gmail.com  
Lyazzat Shinetova  
✉ shinetovalyazzat24@gmail.com

RECEIVED 18 October 2025

REVISED 24 December 2025

ACCEPTED 08 January 2026

PUBLISHED 16 February 2026

## CITATION

Serikbayeva A, Akizhanova D, Shinetova L,  
Altybayeva S and Abdrasilov B (2026)  
Psychometric tools for assessing intercultural  
communicative competence: a case study for  
evaluating ICC in Kazakhstan.  
*Front. Educ.* 11:1727766.  
doi: 10.3389/feduc.2026.1727766

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# Psychometric tools for assessing intercultural communicative competence: a case study for evaluating ICC in Kazakhstan

Assiya Serikbayeva<sup>1\*</sup>, Diana Akizhanova<sup>2\*</sup>, Lyazzat Shinetova<sup>3\*</sup>,  
Shugyla Altybayeva<sup>4</sup> and Bolatbek Abdrasilov<sup>5</sup>

<sup>1</sup>Al-Farabi Kazakh National University, Almaty, Kazakhstan, <sup>2</sup>Department of Translation Theory and Practice, Eurasian National University, Astana, Kazakhstan, <sup>3</sup>Psychometric Laboratory, National Testing Center, Astana, Kazakhstan, <sup>4</sup>Head of Department, Master of Economics, National Testing Center, Astana, Kazakhstan, <sup>5</sup>Candidate of Physical and Mathematical Sciences, Doctor of Biological Sciences, Director, National Testing Center, Astana, Kazakhstan

**Background:** The aim of the study was to adopt and validate psychometric instruments for assessing intercultural communicative competence and to examine the relationship between intercultural communicative competence (ICC) and English language proficiency among bachelor's degree students at Al-Farabi Kazakh National University (KazNU). The study is based on Bennett's (1993) Developmental Model of Intercultural Sensitivity (DMIS) and Byram's (1997) model of intercultural communicative competence (ICC).

**Methods:** A mixed-method approach was used, involving a Likert-scale questionnaire, situational case studies, and an ICC knowledge test. The sample consisted of 118 students aged between 18 and 25 years ( $M = 3.54$ ,  $SD = 0.61$  on the ICC scale). The qualitative component of the research involved 28 English language instructors, who participated only in interviews aimed at exploring viewpoints on language evaluation, assessment of intercultural competence, and usage of psychometric tools. Reliability (Cronbach's alpha), construct validity, and factor analysis were performed. This structure was confirmed through confirmatory factor analysis (CFA) indices ( $\chi^2/df = 2.31$ , CFI = 0.93, TLI = 0.91, RMSEA = 0.067, SRMR = 0.056).

**Conclusion:** The results indicate a statistically significant moderately positive correlation between ICC and English language proficiency, suggesting that linguistic competence and intercultural competence may develop in parallel.

## KEYWORDS

assessment, developmental model of intercultural sensitivity, DMIs, ICC, intercultural communicative competence, psychometric assessment

## 1 Introduction

Assessment is a crucial aspect of the educational process in foreign language learning. Intercultural communicative competence (ICC) plays a vital role in facilitating effective communication among people from diverse cultural backgrounds. Effective language assessment should measure not only linguistic competence but also ICC. ICC refers to the ability to communicate effectively with people from different cultural backgrounds by integrating linguistic skills with cultural awareness (Byram, 1997; Fantini, 2000). In today's

globalized world, intercultural communicative competence is a crucial element of foreign language instruction.

The assessment of ICC in foreign language learning is a complex issue that includes an understanding of cultural norms, beliefs, behaviors, pragmatics, and idiomatic expressions that shape interaction. Language learners who lack cultural knowledge may struggle with smooth communication in different contexts. Culture has long been a subject of theoretical debate (Kroeper and Kluckhohn, 1952); therefore, ICC has been considered the foremost element for everyone; however, whether cultural knowledge should be assessed in language assessments remains a subject of debate. An adequate account of culture ensures more authentic language use and fosters effective communication. The development of ICC is important in English as a Foreign Language (EFL) contexts, as learners must navigate not only linguistic but also sociocultural norms that shape communication (Ichikawa and Kim, 2025; Lee et al., 2023). Therefore, intercultural communicative competence (ICC) is crucial in language learning as well as language assessments.

Psychometric assessment is one method of testing an individual's proficiency in a language. Special tests are designed to check different skills, such as how well the person understands grammar, reads, listens, writes, and speaks in that language. Psychometric research emphasizes that instruments should be tested for content validity, construct validity, and reliability using exploratory and confirmatory factor analyses (Brown, 2015; DeVellis, 2017). Psychometric principles are the standard scientific methods of measurement for assessing individuals' mental capabilities and behavioral styles. Psychometric assessment measures whether test items are well-designed, whether the exam is free from bias, and how effectively they measure students' abilities. Despite the critical role of psychometrics, research in intercultural communication has been limited. On the other hand, being aware of an individual's cultural biases can significantly influence the reliability and credibility of assessments.

Kazakhstan has a multilingual educational policy rooted in its rich heritage and historical background, which fosters international engagement. Language proficiency assessments play a significant role in evaluating linguistic competence as well as intercultural communicative competence (ICC). Kazakhstan effectively implements various assessment types to evaluate foreign language proficiency at different educational levels. However, there are traditional assessments that focus on grammar and vocabulary but neglect ICC in Kazakhstan.

A notable contribution to the field of intercultural communicative competence was made by Kazykhankyzy and Alagözlü (2019), who developed the Intercultural Communicative Competence Scale (ICCS) among two different groups from Turkey and Kazakhstan. Their results highlight two points that are especially pertinent to the current case study: (a) instruments that are based on well-established theory and rigorously tested by psychometricians can measure ICC in the Kazakhstani higher education context with reliability and (b) collaborative, cross-national scale development provides a model for guaranteeing both local cultural sensitivity and international comparability. Mustafina et al. (2024) emphasize the importance of collaboration in teacher education. They found that such activities increase both cultural sensitivity and communication effectiveness. Despite extensive research on ICC, important gaps remain in how ICC is assessed in higher education contexts, particularly in non-Western settings.

The aim of the study was to adopt and validate psychometric instruments for assessing intercultural communicative competence and to examine the relationship between ICC and English language proficiency among bachelor's degree students at Al-Farabi Kazakh National University (KazNU). In doing so, the study sets the following objectives:

- To develop an ICC assessment tool with a psychometric foundation
- To determine students' ICC levels based on Bennett's DMIS model
- To explore the relationship between ICC and language proficiency

To achieve these objectives, the study addresses the following research questions:

- What is the level of intercultural communicative competence among bachelors' degree students?
- What is the relationship between participants' ICC levels and language proficiency levels?
- What is the validity and reliability of the adopted psychometric instruments for evaluating ICC in the Kazakhstani context?

$H_0$ : There is no significant relationship between linguistic competence and intercultural communicative competence (ICC).

$H_1$ : English language proficiency is positively associated with intercultural communicative competence.

The significance of the research lies in the in-depth analysis of intercultural competence (ICC) that promotes empathy and mutual understanding among learners. In order to work or study in a cross-cultural environment, individuals are required to have excellent communication skills; however, language barriers and a lack of cultural knowledge hinder smooth communication. This study theoretically expands Byram's (1997) ICC model and Bennett's (1993) DMIS model and develops psychometric tools for assessing ICC and language proficiency. Practically, the findings will benefit educators in different educational institutions and companies for assessing both linguistic proficiency and ICC.

## 2 Literature review

The following literature was reviewed to gain insights into previous research on ICC assessment. This review of related literature has extensively helped the researchers to read about the current works done in the field. Scholars have proposed various approaches and tools to assess ICC (Fantini, 2000, 2001; Nadeem et al., 2024). Therefore, the following researchers were found to be relevant to the current study.

Byram's (1997) model was useful for this study in defining ICC and its five key dimensions: attitudes (openness and curiosity), knowledge (about one's own and other cultures), skills of interpreting and relating, skills of discovery and interaction, and critical cultural awareness. Byram's framework was helpful in categorizing learners based on their cultural awareness and adaptability; by integrating psychometric instruments, this study ensures the assessment of ICC and linguistic competence.

The Intercultural Development Inventory (Hammer, 2011) is the first cross-cultural valid and reliable instrument of intercultural competence. This instrument has been further validated at the Intercultural Development Inventory (IDI) by Hammer et al. (2003)—a validation confirmed by Bennett (1986, Bennett's (1993)). The entire IDI is composed of 50 items, with 10 additional demographic items. The first validation of IDI was composed of 60 items. The IDI maps orientations related to the stages of Bennett's DMIS, including denial, polarization, minimization, acceptance, adaptation, and cultural disengagement. Further more, Milton Bennett's (1993) DMIS model describes intercultural development through six stages from ethnocentric to ethnorelative orientations. Based on this framework, the Intercultural Development Inventory was developed as a psychometrically validated instrument to measure individuals' orientations toward cultural differences (Hammer et al., 2003). Our study uses Bennett's DMIS framework as a conceptual background for interpreting different levels of ICC observed in Kazakhstani university students (see Figure 1).

Within Kazakhstan, research on ICC measurement was conducted by Kazykhankyzy and Alagözülü (2019). They developed the Intercultural Communicative Competence Scale (ICCS) for pre-service English teachers in Turkey and Kazakhstan. Baishymyrova and Sadykova (2024) used an existing Intercultural Communication Scale to test translator candidates in Kazakhstani public universities. Her work emphasizes the practical relevance of ICC measurement for professional training and offers more proof that psychometric assessment of ICC is both feasible and valuable in the Kazakhstani context. Furthermore, research has shown the effectiveness of collaborative and communicative methods in fostering ICC among language learners (Mustafina et al., 2024; Nurgali et al., 2025).

Smakova and Paulsrud's (2020) study reexamined how Kazakhstani EFL teachers perceived and understood ICC as well as how successfully they incorporated it into their lesson plans. Their evaluation tool concentrated on secondary schools in Kazakhstan that used a specific governmental project (Trinity of Languages), especially those where English was the main language of teaching. Duisembekova's (2021) study developed and validated a new instrument called the Beliefs about Intercultural Communicative Competence Inventory (BICCI) to measure student–teachers' beliefs about intercultural communicative competence (ICC).

Lombardi (2010) conducted extensive exploration of ICC assessment tools, especially five of the most common instruments appropriate for use in higher education institutions: the Intercultural Development Inventory (IDI), the Cross-Cultural Adaptability Inventory (CCAI), the

Cross-Cultural World-Mindedness Scale (CCWMS), the Intercultural Sensitivity Inventory (ISI), and the Assessment of Intercultural Competence (AIC). The IDI and CCAI are two commercially available tools that have dominated the research landscape in recent years. The latter three instruments represent the emerging non-commercial sector. Several tools were proposed to identify ICC level and in this study we utilized the IDI framework to design and structure questionnaires.

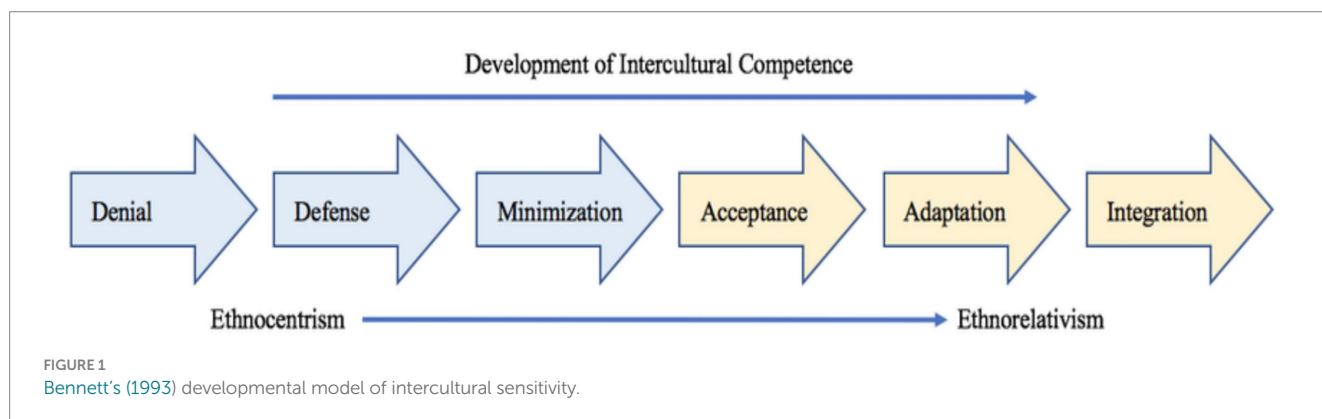
Language cannot be separated from culture; therefore, Hofstede's (1980) cultural dimensions theory was useful to examine participants' ability to recognize cultural differences and similarities. Hofstede's (1980) framework identifies key dimensions such as individualism, collectivism, power distance, indulgence, and restraint. By implementing this in theory, the study aimed to evaluate participants' intercultural communicative competence.

The ICSI, CCAI, and IDI are instruments that are used for self-report assessment. Tatzali et al. (2025) developed a 3-factor ICCEI instrument to measure EFL teachers' intercultural communicative competence; their analyses indicated high reliability ( $\alpha \approx 0.92$ ) The Intercultural Sensitivity Inventory (ICSI) was created by Bhawuk and Brislin (1992) to assess a person's capacity for adaptation when residing in a collectivistic culture (Japan) and an individualistic culture (United States). By answering questions on a 7-point Likert scale, business graduate students living in international dorms were asked to self-report how they envisioned living and working in the US and Japan based on what they thought was socially believed as well as general items on flexibility and open-mindedness.

The Cross-Cultural Adaptability Inventory (CCAI) was first created by Kelley and Meyers (1992) as a self-report diagnostic instrument to evaluate a person's capacity and preparedness for successful cultural adaptation.

The Intercultural Sensitivity Scale (ISS) was designed to operationalize the affective aspect of international communication competence, often known as intercultural sensitivity, by Chen and Starosta (2000).

Although previous studies have proposed various models and instruments for assessing intercultural communicative competence, several gaps remain unexplored. First, the majority of research studies involve self-report questionnaires, minimizing the behavioral insights into decision-making aspects of ICC. Second, commonly used tools such as the Intercultural Development Inventory (IDI) limit their usage in many educational settings. Third, although there are theoretical aspects connecting language skills and intercultural communication competence, there is still a



lack of research looking into their connection, especially in non-Western contexts. Addressing these gaps, the present research uses a multi-component assessment that combines situational judgment tasks, a questionnaire using a Likert scale, and knowledge on ICC to provide a more comprehensive evaluation. Empirical evidence examining the relationship between ICC and language proficiency remains scarce, particularly in non-Western settings.

## 3 Method

### 3.1 Design

To ensure the validity and reliability of the research, a mixed-method approach was chosen for the study. The study used quantitative and qualitative research through a cross-sectional survey to examine psychometric properties of an instrument for intercultural communicative competence. This methodological choice is grounded in theoretical models that highlight intercultural reflection and self-awareness as essential components of ICC (Fantini, 2000, 2001; Kunanbayeva, 2013). The design follows recommendations by Hammer et al. (2003), who developed the IDI, a standardized psychometric instrument.

### 3.2 Participants

The quantitative component of the research involved 118 university students aged between 18 and 25 years, with approximately 75% female and 25% male respondents. Participants of the study completed a three-part ICC questionnaire consisting of situational scenarios, Likert-scale questionnaire, and an intercultural test. Participants were asked to complete CEFR-based English proficiency levels. Majority of students with IELTS scores between 4.0 and 5.0 were categorized as B1, while those with scores between 3.0 and 3.5 were categorized as A2. The qualitative component of the research involved 28 English language instructors, who participated only in interviews aimed at exploring viewpoints on language evaluation, assessment of intercultural competence and usage of psychometric tools.

### 3.3 Instruments

The intercultural communication competence (ICC) of the participants was measured using a multi-component questionnaire created especially for this study.

Established frameworks of intercultural development, particularly Bennett's Developmental Model of Intercultural Sensitivity (DMIS; Bennett, 1993) and the Intercultural Development Inventory (IDI; Hammer et al., 2003), as well as descriptors from Byram's (1997) model of ICC, served as a basis for the instrument's development.

The final questionnaire comprised three sections:

#### 3.3.1 Situational scenarios

To illustrate common intercultural experiences in Kazakhstani educational settings, five brief, contextually appropriate scenarios were

developed (e.g., interacting with peers from other ethnic groups or managing culturally sensitive issues).

#### 3.3.2 Likert-scale questionnaire

A set of 20 five-point Likert statements were created based on the scenario work and IDI item formats. Statements were constructed to measure participants' ethnocentric (denial, defense and minimization) and ethnorelative (acceptance, adaptation, and integration) orientations.

#### 3.3.3 General knowledge

The final section was assessed through factual intercultural knowledge including intercultural concepts and understanding of different topics.

The qualitative component of research consists of semi-structured interview questions to explore viewpoints on language evaluation, assessment of intercultural competence, and usage of psychometric tools. The interview questions addressed the following areas: current tools for evaluating ICC, familiarity with psychometric instruments for ICC assessment, difficulties in evaluating ICC, and representation in the national English curriculum.

## 3.4 Data analysis

For statistical analysis, the free software R 4.3.1 (R Core Team, 2023) was used through the RStudio interface (version 2023.06.1 + 524). The psychometric analysis of the Likert-scale questionnaire was investigated using reliability and confirmatory factor analysis (CFA). Negatively worded items were reverse-coded prior to computing scale scores. Thematic coding was used to analyze qualitative data from teachers. The analysis was conducted with the support of MAXQDA software. Coding was carried out iteratively, with codes being refined and combined as patterns emerged in the data.

## 4 Results

### 4.1 Preliminary item analysis

Preliminary analyses were conducted to examine the distributional properties, discriminatory power, and internal consistency of the ICC Likert-scale items and correlational analyses (Table 1).

Preliminary analysis was conducted for the 20 Likert-scale items in the questionnaire. Mean (M), standard deviation (SD), minimum and maximum values, skewness (g1), and kurtosis (g2) were calculated for every item. The results showed that all items had acceptable distributional features, with skewness and kurtosis values lying within the suggested range of  $\pm 1$ , indicating univariate normality. The discrimination index (DI) was calculated through Pearson's product-moment correlation between each item and the total scale score. All items showed adequate discrimination ( $DI > 0.20$ ), indicating that every item made a significant contribution to the overall construct. Cronbach's alpha calculated for assessing internal consistency reliability was  $\alpha = 0.82$  and all 20 items were kept for further analysis. The removal of any item did not demonstrate a significant increase in the alpha coefficient (Table 2).

TABLE 1 Intercultural communicative competence assessment for Kazakhstani students (ICC-KZ).

	Questions	SD	D	N	A	SA	Avg. score
Q1	Cultural differences do not matter in communication as long as people speak the same language.	5	77	17	8	11	2.52
Q2	I do not see a need to learn about other cultures.	62	24	17	7	8	1.96
Q3	My language courses include lessons about culture.	12	17	69	13	7	2.94
Q4	Cultural knowledge is only necessary when traveling abroad.	28	71	6	4	9	2.13
Q5	Some cultures are better than others.	56	35	12	8	7	2.00
Q6	Cultural differences can create communication barriers.	38	16	8	46	10	2.84
Q7	Cultural differences often lead to misunderstandings.	22	18	6	37	35	3.17
Q8	People from other cultures should adapt to my way of thinking.	33	44	15	13	13	2.27
Q9	Regardless of culture, people are essentially the same.	15	23	19	22	39	3.23
Q10	Cultural differences can be managed if we make an effort.	22	15	11	46	24	3.07
Q11	As a teacher, I believe all students should be treated the same, regardless of cultural background.	0	6	13	64	35	4.09
Q12	Respecting others is enough to ensure smooth communication.	13	18	7	69	11	3.10
Q13	I actively try to learn about different cultures.	23	12	24	31	28	3.00
Q14	I can identify high-context and low-context cultures.	45	17	33	17	6	2.34
Q15	I recognize differences between explicit and implicit communication.	33	24	15	34	12	2.66
Q16	I understand that cultures have different views on time, space, and personal interactions.	16	5	15	54	28	3.47
Q17	I can adapt my behavior when interacting with different cultures.	12	8	5	39	54	3.83
Q18	I am aware of personal space differences across cultures.	13	6	26	39	34	3.52
Q19	I am open to changing my behavior to integrate into a new cultural setting.	26	14	21	27	30	3.04
Q20	I follow the saying: "When in Rome, do as the Romans do" by adjusting to local customs.	12	8	14	22	62	3.95

TABLE 2 Descriptive analysis of the items.

Item	Mean	SD	Min	Max	g1	g2	DI	$\alpha$
Item 1	2.517	1.019	1	5	1.383	1.01	0.023	0.833
Item 2	1.941	1.235	1	5	1.193	0.384	0.103	0.832
Item 3	2.881	0.944	1	5	-0.069	0.564	0.197	0.826
Item 4	2.11	1.052	1	5	1.567	2.24	0.071	0.831
Item 5	1.941	1.179	1	5	1.263	0.723	-0.089	0.839
Item 6	2.78	1.457	1	5	-0.081	-1.616	0.401	0.818
Item 7	3.381	1.507	1	5	-0.476	-1.303	0.555	0.809
Item 8	2.398	1.302	1	5	0.759	-0.54	0.358	0.82
Item 9	3.398	1.439	1	5	-0.309	-1.307	0.412	0.817
Item 10	3.297	1.416	1	5	-0.505	-1.137	0.221	0.828
Item 11	4.085	0.78	2	5	-0.81	0.714	0.297	0.823
Item 12	3.398	1.185	1	5	-0.882	-0.429	0.797	0.799
Item 13	3.246	1.432	1	5	-0.354	-1.175	0.687	0.802
Item 14	2.331	1.268	1	5	0.402	-1.033	0.051	0.834
Item 15	2.729	1.4	1	5	0.098	-1.416	0.635	0.805
Item 16	3.619	1.274	1	5	-0.99	-0.03	0.622	0.807
Item 17	3.966	1.3	1	5	-1.265	0.424	0.678	0.803
Item 18	3.636	1.259	1	5	-0.797	-0.235	0.501	0.813
Item 19	3.178	1.494	1	5	-0.248	-1.355	0.673	0.802
Item 20	3.966	1.358	1	5	-1.103	-0.088	0.611	0.807

g1, skewness; g2, kurtosis; DI, discrimination index;  $\alpha$ , Cronbach's alpha if the item is deleted. Negatively worded items were reverse-coded prior to computing scale scores.

## 4.2 Validity of the internal structure and reliability

To verify the validity of the internal structure of the instrument, confirmatory factor analysis (CFA) was carried out, obtaining adequate fit indices  $\chi^2/df = 2.31$ , CFI = 0.93, TLI = 0.91, RMSEA = 0.067, and SRMR = 0.056, shown in Table 3. Composite reliability scores exceeded the recommended threshold of 0.70, providing additional evidence of reliability. The average variance extracted (AVE) was used to evaluate convergent validity. AVE values were acceptable for some factors, while others fell slightly below the recommended threshold, which is common in exploratory psychometric research. The standardized CFA model with three latent factors is presented in Figure 2.

TABLE 3 Confirmatory factor analysis with evidence of reliability.

Initial number	F1	F2	F3
Item 1		0.06	
Item 2		0.81	
Item 3		0.1	
Item 4	0.06		
Item 5			0.05
Item 6	0.61		
Item 7	0.74		
Item 8	0.39		
Item 9			0.63
Item 10			0.23
Item 11			0.35
Item 12	0.87		
Item 13	0.81		
Item 14		0.03	
Item 15	0.79		
Item 16	0.7		
Item 17			0.91
Item 18			0.63
Item 19	0.81		
Item 20			0.9
$\alpha$	0.84	0.3	0.66
CR	0.88	0.23	0.76
AVE	0.47	0.17	0.37
F1	1.0	0.11	0.81
F2	0.11	1.0	0.06
F3	0.81	0.06	1.0

F1, intercultural attitudes; F2, intercultural awareness; F3 = behavioral adaptation;  $\alpha$  = Cronbach's alpha; AVE = average variance extracted.

## 4.3 Confirmatory factor analysis

The proposed factor structure of the ICC questionnaire tool was tested through confirmatory factor analysis (CFA). The model indicated  $\chi^2/df = 2.31$ , CFI = 0.93, TLI = 0.91, RMSEA = 0.067, and SRMR = 0.056, indicates an adequate fit to the data (Table 4).

## 4.4 Situational scenarios for ICC Part 1

The first section of the instrument consists of situational scenarios to assess participants' intercultural decision-making (see Tables 5–9).

## 4.5 Situational scenarios results

The situational judgment tasks (SJT) consists of five situations intended to evaluate intercultural decision making completed by 118 respondents. In scenario 1, the majority of participants chose acceptance ( $n = 62, 52.5\%$ ) over adaptation ( $n = 11, 9.3\%$ ). The minimization stage accounted for 18 participants. In scenario 2, adaptation-oriented responses were common ( $n = 57, 48.3\%$ ), followed by acceptance ( $n = 46, 39.0\%$ ). However, defense-oriented responses showed fewer results ( $n = 15, 12.7\%$ ). In scenario 3, the common response was adaptation-oriented answer ( $n = 88, 74.6\%$ ), while 13 individuals (11.0%) gave acceptance replies. Responses focused on minimization were uncommon ( $n = 17, 14.4\%$ ). Furthermore, in scenario 4, acceptance-oriented ( $n = 62, 52.5\%$ ) was most common, followed by adaptation ( $n = 29, 24.6\%$ ). Defense and Minimization responses were chosen by 27 participants (22.9%). In scenario 5, the majority of participants selected acceptance-oriented responses ( $n = 55, 46.6\%$ ), followed by adaptation ( $n = 26, 22.0\%$ ) and minimization ( $n = 18, 15.3\%$ ). Overall, 75% of responses were between the acceptance and adaptation stages, which demonstrate ethnorelative orientations.

## 4.6 Intercultural knowledge test results

The results of the intercultural knowledge test, represented in Table 10, show that participants exhibited varying levels of intercultural knowledge. The highest percentage of right answers was observed for the high-context cultures (37.3%), whereas collectivism (26.3%) had lower accuracy rates (Table 11).

## 4.7 Teachers' perspectives on ICC assessment

The qualitative data revealed four main themes related to the assessment of intercultural communicative competence.

Theme 1: Lack of formal ICC assessment.

Teachers reported that intercultural communicative competence is typically evaluated by group discussions, activities, and presentations rather than a systematic assessment.

Theme 2: Insufficient use of psychometric tools.

None of the participating teachers indicated using psychometric tools for assessing ICC.

Theme 3: Difficulties in evaluating ICC.

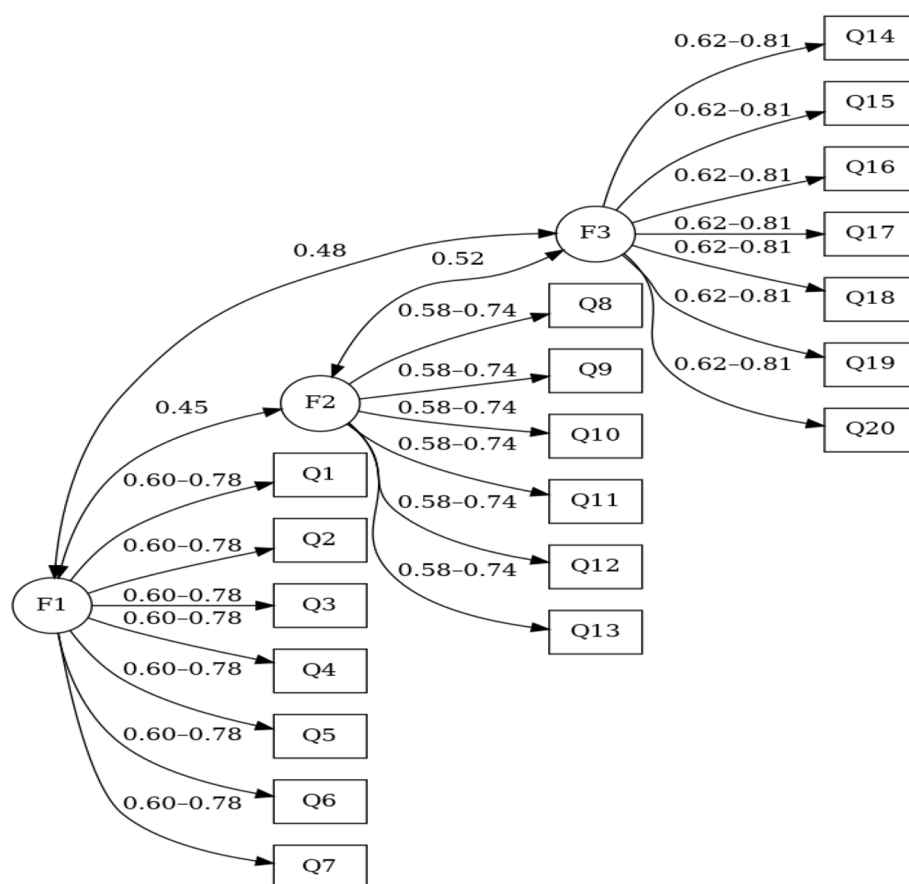


FIGURE 2 Standardized three-factor confirmatory factor analysis (CFA) model of the ICC scale.

TABLE 4 Confirmatory factor analysis.

Fit index	Recommended value	Obtained value	Decision
$\chi^2/df$	<3.00	2.31	Acceptable
CFI	$\geq 0.90$	0.93	Good fit
TLI	$\geq 0.90$	0.91	Good fit
RMSEA	$\leq 0.08$	0.067	Acceptable
SRMR	$\leq 0.08$	0.056	Good fit

$\chi^2$ , chi-square; CFI, comparative fit index; TLI, Tucker–Lewis Index; RMSEA, root mean square error of approximation; SRMR, standardized root mean square residual.

Several challenges were reported by teachers such as lack of clear assessment criteria, limited time, limited materials, and heavy teaching workloads.

Theme 4: Necessity for a standardized ICC assessment instrument.

Instructors reported the necessity for a standardized psychometric tool to ensure fair, reliable, and objective assessment of ICC.

The correlation analysis revealed a statistically significant moderately positive relationship between intercultural communicative competence (ICC) and English language proficiency ( $r = 0.41$ ,  $p = 0.003$ ). These results support the alternative hypothesis ( $H_1$ ), indicating that students with higher levels of English language proficiency tend to exhibit higher levels of intercultural communicative

competence. Accordingly, the null hypothesis ( $H_0$ ), which stated that there is no significant relationship between linguistic competence and intercultural communicative competence, was rejected.

## 5 Discussion

The present research aimed to analyze students’ intercultural communicative competence (ICC) using a mixed-method approach, situational judgment tasks, a Likert-scale questionnaire, and a knowledge test. According to the results of all three parts, participants generally had positive attitudes toward cultural diversity, placing them in Bennett’s DMIS model. The results indicate that in higher education settings students are more likely to become aware of cultural differences and multicultural environments (Smakova and Paulsrud, 2020; Kazykhankyzy and Alagözlü, 2019). Similar to the study by Mustafina et al. (2024), the present study confirms that structured educational settings can promote openness and adaptive intercultural behaviors (Mustafina et al., 2024). High mean scores in the Likert-scale questionnaires (Q20), (Q17) suggest that participants acknowledge the significance of behavioral flexibility as a fundamental aspect of ethnorelative development. This supports Deardorff’s (2006) paradigm, which highlights adaptation and reflection as important results of intercultural learning.

TABLE 5 Situational scenarios 1.

You are a new employee at a multinational company. One of your Chinese colleagues gives a presentation, but you notice some parts need correction. How would you respond?		Answers	DMIS stage
A	I politely point out the unclear parts and suggest improvements.	11	Adaptation
B	I remain silent to avoid embarrassing my colleague.	18	Minimization
C	I provide feedback privately when we are alone.	27	Acceptance
D	Since I am new, I prefer to observe and understand the company culture first.	62	Acceptance

TABLE 6 Situational scenarios 2.

Emma, a student from the USA, arrives at a Chinese university for the first time. She enters the classroom and loudly says, "Hi everyone! I'm Emma, from the USA!" She notices that her classmates remain silent and do not respond in the same energetic way. Why might this be?		Answers	DMIS stage
A	They are taking time to observe and understand her.	46	Acceptance
B	They do not like her and find her behavior childish.	7	Minimization
C	Cultural norms differ—Emma is from a more direct culture, while her classmates may be from an indirect one.	57	Adaptation
D	They are ignoring her on purpose.	8	Acceptance

TABLE 7 Situational Scenarios 3.

Emma wants to buy a gift for her Chinese colleague but is unsure if a watch is appropriate. In some cultures, gifting a watch can symbolize limited time or bad luck. How should she proceed?		Answers	DMIS stage
A	Research cultural traditions before selecting a gift.	88	Adaptation
B	Assume that since her other friends liked watches, her colleague will too.	5	Minimization
C	Ask her colleague directly if she likes watches.	13	Acceptance
D	Avoid giving gifts to people she does not know well.	12	Minimization

TABLE 8 Situational scenarios 4.

You attend an international conference where people greet each other differently from your culture. What do you do?		Answers	DMIS stage
A	Greet them in the way I'm used to, even if it's different.	11	Minimization
B	Avoid greeting to prevent making mistakes.	16	Defense
C	Observe how they greet each other and try to adapt.	29	Adaptation
D	Politely ask about the appropriate way to greet.	62	Acceptance

TABLE 9 Situational scenarios 5.

During a conversation, your international colleague stands very close to you, making you uncomfortable. What do you do?		Answers	DMIS stage
A	Step back slightly to signal my personal space preference.	19	Acceptance
B	Stay in place even if I feel uncomfortable.	18	Minimization
C	Try to adjust, knowing that personal space varies across cultures.	26	Adaptation
D	Avoid interacting with that person in the future.	55	Acceptance

The Likert-scale questionnaire revealed positive views about intercultural communicative competence and average mean scores show openness, adaptability, and respect for cultural diversity. On

the other hand, items with lower scores such as Q2 ("I do not see a need to learn about other cultures") mean that participants are in the minimization stage; however, they acknowledge the value of

TABLE 10 Intercultural knowledge test.

Item	Correct answer	<i>n</i>	%
Proximity meaning	Physical space between people	20	16.9
High-context culture	Indirect communication and non-verbal cues	33	28.0
“Lose face”	To damage one’s reputation	39	33.1
High-context countries	Kazakhstan, China	44	37.3
Cultural value	Collectivism	31	26.3

TABLE 11 Correlation analysis.

Variables	<i>r</i>	<i>p</i>
ICC total score—English proficiency	0.41	0.003

cultural norms. According to the knowledge test, participants showed a moderate level of intercultural communicative competence. Participants performed best on questions about “high-context” and on “low-context” cultures and “losing face,” indicating knowledge about cultural norms and beliefs. However, lower scores were in the areas such as “proximity” and “collectivism,” showing the gap between theoretical understanding of key concepts. This finding is consistent with previous research (Kazykhankyzy and Alagözli, 2019; Baishymyrova and Sadykova, 2024), which reported that learners often acquire practical intercultural awareness faster than abstract conceptual understanding.

From a psychometric perspective, confirmatory factor analysis validated the ICC tool’s structure, encompassing intercultural attitudes, awareness, and behavioral adaptation. Model fit indices were acceptable and similar to those found in previous research assessing ICC (Tatzali et al., 2025). This finding suggests that the instrument can be used in a higher education context where ICC assessment tools are limited.

Qualitative findings from teacher interviews highlight issues in how intercultural communicative competence (ICC) is assessed in the Kazakhstani context. Instead of using standardized tools, instructors mainly depend on classroom activities and informal observations. This aligns with findings by Mustafina et al. (2024), who emphasize structured assessment frameworks to ensure validity and reliability in evaluating intercultural communicative competence.

The analysis revealed a positive correlation between the ICC indicators (knowledge and attitudes) and the level of English language proficiency ( $r = 0.41$ ,  $p = 0.003$ ). Cross-cultural understanding is supported by language competence, as evidenced by the tendency toward higher rates of attitudes and knowledge among participants with a higher level of English language proficiency. This result is consistent with the results of earlier studies that showed that language competence promotes

the development of cognitive and behavioral components of ICC, allowing students to more effectively recognize cultural cues and adjust their communication tactics. Learners with higher language proficiency may have greater access to authentic materials and intercultural contexts, which facilitate the development of intercultural awareness. This finding supports previous research that emphasizes how the linguistic, cognitive, and behavioral aspects of ICC are independent (Deardorff, 2006; Fantini, 2000).

Overall, the study extends existing ICC frameworks by demonstrating how situational scenarios, a Likert-scale questionnaire, and knowledge tests can be integrated to capture multiple dimensions of intercultural competence within the Kazakhstani higher education system.

## 5.1 Limitations

While the current study addresses psychometric assessment several limitations should be acknowledged. First, the limited sample size from a single higher university and undergraduate students means that results may not be broadly applicable. Further studies will involve several universities and geographical areas. Another limitation is that English language proficiency levels did not encompass all levels only (A2, B1); however, further studies could incorporate all levels to provide a precise analysis. Finally, the limited number of instructors in the qualitative part of the research may not represent the full range of perspectives on ICC assessment, and further research should increase the qualitative study size to explore how ICC develops over time.

## 6 Conclusion

Overall, this research aimed to provide a link between language assessment and intercultural communicative competence (ICC) within the Kazakhstani educational context. The goals stated at the beginning were met. The first step included a review of existing language assessment tools, which revealed that numerous popular assessment instruments feature elements of ICC, thus underlining the importance of intercultural competence in current language assessments.

The study successfully met all its aims and objectives. The study analyzed psychometric tools such as the Intercultural Development Inventory and Cross-Cultural Adaptability and identified those suitable for Kazakhstani education. The study revealed a positive correlation between ICC and language proficiency. On the other hand, the study identified challenges in integrating ICC into national language assessments such as limited training and a lack of standardized tools.

The findings revealed a moderate correlation between English proficiency and ICC; teachers’ responses showed the necessity for integrating standardized, psychometric assessment tools. Second, a customized questionnaire based on the Intercultural Development Inventory (IDI) was developed and implemented for measuring the ICC levels of participants. Third, the study proved that it is possible to integrate ICC components into the FL needs analysis assessment by

using tests that are of a reflective, scenario-based, and psychometrically grounded nature.

Overall, the study supports earlier theories of intercultural competence that emphasize the dynamic interaction between language, cognition, and culture (Fantini, 2000, 2001; Kramsch, 2000; Kunanbayeva, 2013). These findings provide valuable insights for educational policy, curriculum design, and teacher training programs aiming to enhance intercultural communicative competence in Kazakhstan and similar multilingual contexts.

## Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

## Ethics statement

Ethical approval was not required as the study involved anonymous survey participation with no collection of personal or sensitive data. Participation was voluntary, and informed consent was obtained from all respondents. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

## Author contributions

AS: Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Validation, Visualization, Writing – original draft. DA: Conceptualization, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. LS: Data curation, Funding acquisition, Investigation, Supervision,

Validation, Writing – review & editing. SA: Funding acquisition, Investigation, Project administration, Resources, Software, Supervision, Writing – original draft. BA: Writing – review & editing, Supervision, Validation.

## Funding

The author(s) declared that financial support was not received for this work and/or its publication.

## Conflict of interest

The author(s) declared that this work was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

## Generative AI statement

The author(s) declared that Generative AI was not used in the creation of this manuscript.

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